

## Cancer Cachexia Appetite Stimulants (Orexigenic Medications)

Reversing the effects of cancer cachexia does not appear to be influenced by stimulating the appetite.<sup>1</sup> Progestrogens (corticosteroids) have been used to improve appetite in palliative care, however quality of life and recommendations for dosage or duration of treatment have not been established.<sup>2</sup> The decision to use an orexigenic drug should be based on the side effects, cost and burden of treatment.<sup>1</sup> In addition, current therapies have used only one drug, which appears to have very little benefit in resolving cachexia.<sup>4</sup> The benefits of using this drug in the elderly with cancer cachexia is not clear.<sup>30</sup> Current studies are investigating an approach of drug combinations to reverse cancer cachexia.<sup>3,4</sup>

Until an effective intervention for reversing cancer cachexia is developed, *early intervention* with nutritional support and *prevention of treatment-related morbidities* (e.g., nausea, vomiting, diarrhea, dysphagia, pain, or depression) is advised.<sup>4,5</sup>

GENERIC/BRAND NAME	INDICATION/ DOSAGE/FORM	COMMENTS
<p><b><u>cypheptadine</u></b><sup>6,7</sup> (antihistamine)</p> <p><b>Periactin</b><sup>®</sup></p>	<p><u>Tablet</u>  <u>Adult Initial dose:</u> 2 mg 4 x/day  <u>Maintenance dose:</u> Gradual increase over 3 weeks to 8 mg 4 x/day</p> <p><u>Pediatrics &gt; 13 years:</u> 2 mg 4 x/day            May gradually increase over 3 weeks to 8 mg 4 x/day  <u>Maximum Dose:</u> 32 mg/day</p>	<p><b><u>Use in oncology population:</u></b> Increases appetite;<sup>8</sup> failed to prevent weight loss;<sup>8,24,27</sup> not well studied.<sup>24</sup> however, appears to be effective with carcinoid syndrome anorexia/cachexia;<sup>27</sup> non-FDA labeled indications for loss of appetite.<sup>28</sup></p> <p><b><u>Nutrition-related side effects:</u></b> constipation, diarrhea, edema, nausea, polyuria, vomiting, xerostomia<sup>9</sup></p> <p><b><u>To reduce stomach upset:</u></b> Take with food or milk<sup>9</sup></p> <p><b><u>Other side effects:</u></b> ataxia, drowsiness, dizziness, euphoria, hallucinations, headache, hepatic dysfunction, hypotension, irritability, photosensitivity, polyuria<sup>9</sup></p> <p><b><u>Avoid:</u></b> Alcoholic beverages;<sup>8</sup> henbane, scopolia, St John's wort, thuja<sup>9</sup></p>
<p><b><u>dexamethasone</u></b><sup>7,10,11</sup> <b>decadron</b> (corticosteroid)</p> <p>No brand names</p>	<p><u>Tablets</u>            Initial dose: 0.75 - 9 mg/day</p> <p><u>Reasonable dose:</u> 4 mg/day            (A lower dose may also be effective)<sup>27</sup></p>	<p><b><u>Use in oncology population:</u></b> Improves appetite and QoL;<sup>5</sup> no increase in LBM;<sup>29</sup> no wt gain;<sup>8,24,27</sup> appetite stimulation short-lived;<sup>24,27</sup> appetite may fall after 4 weeks;<sup>2</sup> optimal dose not known;<sup>2,13</sup> significantly lowers appetite loss/wt loss with chemo for lung ca, but no appetite improvement/wt gain;<sup>12</sup> beneficial for some with a poor prognosis;<sup>11</sup> should be used during pre-terminal phase of cachexia<sup>5</sup></p> <p><b><u>Nutrition related side effects:</u></b> bloating, dyspepsia, edema, esophagitis, gastritis, hyperglycemia, nausea, vomiting<sup>7,8</sup></p> <p><b><u>Other side effects:</u></b> bruising, Cushingoid appearance, delayed healing, dizziness, headache, immune suppression, insomnia, muscle weakness,</p>

		<p>peptic ulcer, psychological disturbances, seizures.<sup>7,8,24,27</sup>  <b>To reduce stomach upset:</b> Take with food &amp; limit caffeine.<sup>7</sup>  <b>Avoid:</b> Alcoholic beverages; grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), tangelos; lily-of-the-valley; St John's wort; tansy ragwort.<sup>9</sup>  <b>Special Alerts:</b>  -<b>Monitor closely:</b> <u>diabetes</u>, <u>adrenal</u> and <u>renal</u> function<sup>7</sup>  -<b>Long-term use:</b> calcium wasting, Cushing's syndrome, osteoporosis, muscle wasting (myopathy), cataracts, pancreatitis, adrenocortical insufficiency, low serum zinc level; needs calcium/vitamin D supplement<sup>7,27</sup></p>
<p><b><u>medroxyprogesterone acetate</u></b><sup>13,14</sup>  <i>(progestational agent)</i></p> <p><b>Prometrium®</b>  <b>Provera®</b></p>	<p><u>Tablet</u>  5 mg  <u>Capsule</u>  100, 200mg  <u>Minimum dose</u>  (In published trials):200 mg/day<sup>15</sup></p>	<p><b>Use in oncology population:</b> Weight gain as increased fat &amp; fluid retention;<sup>29</sup> increased sense of well-being;<sup>16</sup> not enough evidence to recommend doses or duration of treatment to increase appetite.<sup>13</sup>  <b>Nutrition related side effects:</b> constipation, cramps, diarrhea, dyspepsia, edema, hyperglycemia, nausea, vomiting, xerostomia<sup>7</sup>  <b>To reduce risk of GI upset:</b> Take with food; also increases bioavailability.<sup>7</sup>  <b>Other side effects:</b> depression, drowsiness, headache, hot flashes, musculoskeletal pain; vision changes<sup>7</sup>  <b>Avoid:</b> grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), tangelos; St John's wort<sup>9</sup>  <b>Special Alert:</b>  -<b>Diabetes:</b> Monitor closely  -<b>Liver function:</b> Monitor</p>

<p><b>megestrol acetate</b> 11,17,18 (progestational agent)</p> <p><b>Megace</b>® (U.S. brand.) <b>Megace</b>® ES</p> <p><b>Megace Os</b> (Canada)</p>	<p><u>Oral Suspension Megace</u>® (200 mg/5 mL) Tablets</p> <p><u>Teen &amp; Adult Dosage Megace</u>® <u>Initial</u>:400 mg/day<sup>27</sup> (10 mL/ day) After 1st month: can be changed to: 480-800 mg/day<sup>27</sup> for 3 months</p> <p><u>Usual</u>: 400-800 mg/day <u>Elderly</u>: Start at low end of dosing range. <u>Conc oral suspension Megace</u>® ES (625 mg/5 mL) <u>Adult Dosage Megace</u>® ES <u>Initial/Usual</u>: 625 mg/day (5 mL/day) <u>Duration of Use</u>:Maximum of 3 months.<sup>19</sup></p> <p><u>NOTE</u>: Megace® ES (625 mg/5 mL) formula is different than Megace® (200 mg/5 mL).</p> <p><u>They are NOT interchangeable.</u></p>	<p><b>Use in oncology population</b>: Increases appetite, wt gain &amp; improved health-related QoL; 8,11,29 in 30% of pts;<sup>20</sup> increase in appetite &amp; wt due to increased fat &amp; fluid retention;<sup>5,19,29</sup> no increase in LBM;<sup>5,25</sup> recommended use with an anti-inflammatory agent, (e.g., EPA);<sup>21</sup> must use continuously for 2 mos; may take 4-6 weeks for improvement;<sup>16,17</sup> not enough information to determine optimal dose;<sup>5,29</sup> safety &amp; effectiveness in pediatrics has NOT been established.<sup>29</sup></p> <p><b>Avoid use with</b>: immobile or bedridden patients<sup>19</sup></p> <p><b>Nutrition related side effects</b>: diarrhea, dyspepsia, edema, flatulence, hyperglycemia, nausea, vomiting<sup>7,17,18,29</sup></p> <p><b>Other side effects</b>: adrenal suppression, bone pain, Cushing's syndrome,<sup>29</sup> DVTs (doses &gt; 800 mg/day) especially with concomitant chemo,<sup>27</sup> hot sweats,<sup>29</sup> impotence, edema, vaginal spotting<sup>8,29</sup></p> <p><b>To reduce stomach upset</b>: Take with food.</p> <p><b>Special Alerts</b>:</p> <ul style="list-style-type: none"> <li>-<u>Diabetes</u>: Monitor closely, may increase insulin requirements<sup>7,17,18</sup></li> <li>-<u>Renal function</u>, assess periodically<sup>18</sup></li> <li>-<u>Adrenal insufficiency</u><sup>18,19</sup></li> <li>-<u>Testosterone</u> levels rapidly drops (males)<sup>19</sup></li> </ul>
<p><b>methylprednisolone</b><sup>22</sup> (corticosteroid)</p> <p><b>Duralone</b>® (U.S. brand) <b>Medralone</b>® <b>Medrol</b>® <b>M-Prednisol</b>® <b>Solu-Medrol</b>®</p>	<p><u>Tablets</u>: 2 mg, 4 mg, 8 mg, 16 mg, 24 mg, 32 mg <u>Injection</u> - I.M., I.V. <u>Adult dosage</u>: 4-48 mg/day <u>Peak action</u>: 1-2 hrs <u>Duration</u>: 1.25-1.5 days <u>Injection</u> <u>Onset</u>: 6-48 hrs <u>Peak action</u>: 4-8 days <u>Duration</u>: 1-4 weeks</p> <p>Effects may diminish after 4 weeks, while side effects may increase.<sup>2</sup></p>	<p><b>Use in oncology population</b>: Improves appetite &amp; QoL;<sup>5</sup> no weight gain;<sup>1</sup> should be used during pre-terminal phase of cachexia;<sup>5</sup> not enough evidence to recommend doses or duration of treatment to increase appetite;<sup>2</sup> effects may lower after 4 weeks &amp; side effects may increase.<sup>2</sup></p> <p><b>Nutrition related side effects</b>: bloating, dyspepsia, (pedal) edema, esophagitis, gastritis, hyperglycemia, nausea, vomiting.<sup>7,8,22</sup></p> <p><b>To reduce GI upset</b>: Take with food; limit caffeine.<sup>22</sup></p> <p><b>To reduce nausea</b>: Take anti-nausea medications. Small, frequent meals.<sup>22</sup></p> <p><b>Long term use side effects</b>: adrenal suppression, bone thinning, cataracts, insulin resistance, protein breakdown, water retention<sup>5,22</sup></p> <p><b>Other side effects</b>: immune suppression, insomnia, muscle weakness, poor wound healing<sup>8,22</sup></p> <p><b>Avoid</b>: Alcoholic beverages; grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), tangelos; lily-of-the-valley, St John's wort<sup>9</sup></p>

		<p><b>Special Alerts:</b></p> <ul style="list-style-type: none"> <li>-<u>Diabetes</u>: Monitor closely</li> <li>-<u>Tartrazine sensitivity</u></li> <li>-<u>Elevated liver enzymes, hepatomegaly</u></li> <li>-<u>Hypocalcemia</u></li> <li>-<u>Hypokalemia</u></li> <li>-<u>Hypokalemic alkalosis</u></li> <li>-<u>Metabolic alkalosis</u></li> <li>-<u>Negative nitrogen balance</u></li> <li>-<u>Pancreatitis</u></li> <li>-<u>Sodium and fluid retention</u></li> </ul> <p>Caution: Do not stop using this medication suddenly; may cause withdrawal symptoms</p>
<p><b><u>prednisolone</u></b> (<i>corticosteroid</i>)</p> <p>Millipred (U.S brand.) Orapred Pediapred Prelone</p> <p>(Canada) ratio-Prednisolone Sandoz Prednisolone</p>	<p><u>Tablets</u> 5 mg <u>Oral solution</u> 15 mg/5 mL <u>Orally disintegrating tablets</u> (<i>Do not break apart</i>) 10 mg 15 mg 30 mg <u>Oral liquid</u> (5 mg/5 mL) <u>Syrup</u> (15 mg/5 mL) <u>Adult Dose</u> 5 - 60 mg/day</p> <p><u>Oral disintegrating tablet:</u> 10- 60 mg/day</p> <p>Not enough evidence to recommend doses or duration of treatment.<sup>2</sup></p>	<p><b><u>Use in oncology population:</u></b> Improves appetite &amp; QoL;<sup>5</sup> no weight gain;<sup>8</sup> should be used during pre-terminal phase of cachexia;<sup>5</sup> effects may lower after 4 weeks &amp; side effects may increase.<sup>2</sup></p> <p><b><u>Avoid:</u></b> Alcoholic beverages; grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), tangelos; lily-of-the-valley, St John's wort<sup>9</sup></p> <p><b><u>Nutrition related side effects:</u></b> bloating, dyspepsia, edema, esophagitis, gastritis, nausea, protein catabolism, vomiting.<sup>7,8,23</sup></p> <p><b><u>Other side effects:</u></b> catatonia, delusions, depression, dizziness, euphoria, facial flushing, hallucinations, headache, increased sweating, insomnia, lightheadedness, mania, mood changes, nervousness, pancreatitis, restlessness, violent behavior<sup>23</sup></p> <p><b><u>Long term use side effects:</u></b> adrenal suppression, bone loss (with dose of 10 mg/day), cataracts, Cushing's syndrome, glaucoma/increased intraocular pressure, hirsutism, immune suppression, impotence, peptic ulcer, insulin resistance, menstrual irregularities, myopathy, osteoporosis, vertebral compression fractures<sup>5,8,23</sup></p> <p><b><u>To reduce stomach upset:</u></b> Take with food, or aluminum/magnesium containing antacids<sup>23</sup></p> <p><b><u>Special Alert ( Monitor)</u></b></p> <ul style="list-style-type: none"> <li>-<u>Hypernatremia</u></li> <li>-<u>Hypokalemia</u></li> <li>-<u>Fluid retention</u></li> <li>-<u>Negative nitrogen balance</u></li> </ul>

		<ul style="list-style-type: none"> <li>-<u>BUN increase</u></li> <li>-<u>TSH decrease</u></li> <li>-<u>Glucose intolerance</u></li> <li>-<u>Hyperglycemia</u></li> <li>-<u>Blood pressure</u></li> <li>-<u>Bone density</u><sup>16</sup></li> </ul>
--	--	---

**RESULTS FROM CLINICAL TRIAL TREATMENTS** <sup>24,25</sup>

DRUG CATEGORY	COMMON DRUGS USED	BRAND NAMES	COMMENTS	SIDE EFFECTS
<b>ANABOLIC AGENT</b>	fluoxymesterone	Androxy™ Halotestin®	Inferior in wt loss, more toxic vs dexamethasone; <sup>3</sup> limited published reports <sup>28</sup>	Diabetes, DVT, mood swings, osteoporosis
	nandrolone decanoate	none	Limited published reports <sup>28</sup>	
	oxandrolone	Oxandrin®	Limited published reports <sup>28</sup>	
<b>ANTIDEPRESSANT/ ANTIPSYCHOTIC</b>	mirtazapine	Remeron®	Data to support routine use is lacking; <sup>3</sup> further studies needed <sup>3,28</sup>	
	olanzapine	Zyprexa®	Data to support routine use lacking; further studies needed <sup>28</sup>	
<b>ANTI- INFLAMMATORY</b>	EPA (omega 3 FAs)		Mixed results <sup>28</sup>	
	melatonin		Mixed results <sup>3,28</sup>	
	pentoxifylline	Pentoxil® Trental®	Need larger trials; <sup>3</sup> mixed results (heterogenous group) <sup>28</sup>	
	thalidomide	Thalomid	Waiting for results from large trial <sup>3</sup>	Constipation, daytime somnolence, peripheral neuropathy, rash
<b>CANNABINOID</b>	dronabinol	Marinol®	No activity on cancer cachexia; <sup>27</sup> inconsistent evidence on effectiveness <sup>28</sup>	Nausea, vomiting
<b>GROWTH HORMONE</b>	ghrelin	none	Limited studies published	

<b>METABOLIC INHIBITORS</b>	hydrazine sulfate		No efficacy; <sup>3</sup> not FDA approved <sup>28</sup>	
<b>NSAIDs</b>			No increase in LBM <sup>29</sup>	GI upset/bleed

**NOVEL APPROACHES UNDER RESEARCH  
APPETITE STIMULANT (OREXIGENIC) TREATMENT <sup>26</sup>**

INTERVENTION	CLINICAL TRIALS.GOV IDENTIFIER	STATUS	INTERVENTION	PRINCIPAL INVESTIGATOR	AFFILIATION
<b>EICOSAPENTAENOIC ACID OMEGA 3 FAs</b> <i>(Anti-inflammatory)</i>	NCT01048970	<b>ENDED: 12/2010</b> Phase II/III, Interventional, randomized, single blind, parallel assign	Lung ca (st III/IV) w. paclitaxel + cisplatin; 2 cans/d EPA/DHA oral supplement; begin 1 week prior x 2 chemo cycles, BIA	Oscar Arrieta, MD.	National Institute of Cancerología, Mexico City
<b>EICOSAPENTAENOIC ACID OMEGA 3 FAs</b> <i>(Anti-inflammatory)</i>	NCT00815685	<b>ENDED: 8/2010</b> Phase II/III, interventional, non-randomized, single group assign	Open label, Lovaza ((EPA) 4 g x 6 weeks	Nagi Kumar, PhD, RD, FADA	H. Lee Moffitt Cancer Ctr & Research Institute, Tampa, FL
<b>GHRELIN</b> <i>(Growth hormone)</i>	NCT00933361	<b>ENDED: 12/2009</b> Phase I/II, interventional, non-randomized open label	Single group assignment Dose-escalated, 2 x week, SQ ghrelin	Florian Strasser, PD, RD MD	Cantonal Spital St. Gallen, Switzerland
<b>GHRELIN</b> <i>(Growth hormone)</i>	NCT00681486	<b>ENDED: 7/2008</b> Phase III, interventional, randomized double blind	High dose vs low dose daily injection until preterminal	Kent G Lundholm, MD. Dept of Surgery,	Göteborg Univ. Göteborg, Sweden
<b>GHRELIN</b> <i>(Growth hormone)</i>	NCT00378131	<b>ENDED: 4/2007</b> Phase II interventional, randomized double blind	Parallel group, 12 weeks Daily dose of RC-1291 vs placebo	William Polvino, MD.	Helsinn Therapeutics (U.S.)
<b>GHRELIN</b> <i>(Growth hormone)</i>	NCT00219817	<b>ENDED: 10/2006</b> Phase II, interventional, randomized, double-blind	Parallel assignment, safety & efficacy of RC-1291	William Polvino, MD.	Sapphire Therapeutics
<b>INSULIN</b>	NCT00329615	<b>ENDED 9/2005</b> Phase IV, interventional, randomized	Parallel assignment, open label, Insulatard, flexpen Exclusion: Diabetes	Kent G Lundholm, MD. Dept of Surgery,	Göteborg Univ. Göteborg, Sweden
MELATONIN <i>(Anti-inflammatory)</i>	NCT00513357	<b>Active, Ends: 6/2012</b> Phase II, interventional randomized, double blind	Parallel assignment melatonin vs placebo	Egidio Del Fabbro, MD.	U. T. M.D. Anderson Cancer Ctr
MELATONIN <i>(Anti-inflammatory)</i>	NCT00625742	<b>Active, Ends 2/2012</b> Interventional, non-randomized,	Resistance train 2 x/week w/Thera-bands, walk/run 3-4 mins @ 70-80%	Egidio Del Fabbro, MD.	U. T. M.D. Anderson Cancer Ctr

		single group, open label	max HR, (Atenolol + Ibuprofen + 20 mg po melatonin) & Juven® 90 kcals 2 x/day (29 days)		
MIRTAZAPINE (Antidepressant) Remeron®	NCT00832520	<b>Active, Ends: 11/2011</b> Phase II, interventional, non-randomized, open label	Single group, 15 mg mirtazapine po at HS daily x 8 weeks	Claire Verschraegen, MD.	Univ of New Mexico, Albuquerque, New Mexico
MIRTAZAPINE (Antidepressant) Remeron®	NCT00488072	<b>Active, Ends: 1/2012</b> Interventional, randomized, double blind	Parallel assignment, mirtazapine 15 mg po daily x 15 days; days 22-29, increase to 30 mg po daily vs placebo	Shalini Dalal, MD.	U. T. M.D. Anderson Cancer Ctr, Houston, Texas
OLANZAPINE (Antidepressant/Antipsychotic) Zyprexa®, Fluoxetine® Symbyax®	NCT00489593	<b>Recruiting, Ends: 4/2012</b> Phase I, Interventional, non-randomized, open label	Single group, 2.5 mg po daily x 28 days, incr. q 3-14 d by 2.5-5 mg until the designated dose for cohort reached	Razelle Kurzrock, MD.	U. T. M.D. Anderson Cancer Ctr, Houston, Texas
OXANDROLONE Oxandrin® (Anabolic agent) MEGESTROL ACETATE Megace®	NCT00070148	<b>ENDED: 8/2007</b> Phase III, Interven- tional, randomized	Arm 1. megestrol acetate Arm 2. oxandrolone QoL assessment BIA measurements	Glenn J. Lesser, MD.	Wake Forest Univ. Winston-Salem, North Carolina
TESTOSTERONE	NCT00878995	<b>Recruiting; Ends: 3/2013</b> Phase I interventional randomized, double blind	Parallel assignment Cervical cancer; chemo +/- or radiation + Testosterone enanthate. DEXA & MRI	Melinda Sheffield- Moore, PhD	Univ. of Texas, Galveston
THALIDOMIDE (anti-inflammatory)	NCT00379353	<b>Active: Ends 12/2011</b> Phase II, Interventional, randomized, double blind	Parallel assignment Thalidomide 100 mg caps po 1 x/day x 14 days vs placebo	Eduardo Bruera, MD.	U. T. M.D. Anderson Cancer Ctr, Houston, Texas
WHITE WINE	NCT00936728	<b>Recruiting; Ends 7/2013</b> Interventional, randomized, Open label	Parallel assignment Arm 1. white wine Arm 2. po nutritional supplement (e.g., Boost / Ensure) 2 x/day for 3-4 weeks	Tom R. Fitch, MD. Amber L. Isley, MD. Study Chair: Aminah Jatoi, MD.	Mayo Clinic-AZ Mayo Clinic- FL Mayo Clinic, MN

## Appetite Stimulant (Orexigenic) Medications References

1. del Fabbro E, Dalal S and Bruera E. Symptom control in palliative care--Part II: Cachexia/anorexia and fatigue. *J Palliat Med.* 2006 Apr;9(2):409- 21.
2. Yavuzsen T, Davis MP, Walsh D, Le Grand S and Lagman R. Systematic review of the treatment of cancer-associated anorexia and weight loss. *J Clin Oncol* 2005;33:8500-11.
3. Topkan E, Yavuz AA, Ozyilkan O. Cancer Cachexia: Pathophysiologic Aspects and Treatment Options. *Asian Pacific J of Cancer Prev,* 2007;8:445-451.
4. Mantovani G, Maccio A, Madeddu C, Serpe R, Massa E, Dessi M, Panzone F, and Contu P. et al. Randomized Phase III Clinical Trial of Five Different Arms of Treatment in 332 Patients with Cancer Cachexia. *The Oncologist* 2010;15:200-211.
5. Tazi EM and Errihani H. Treatment of Cachexia in Oncology. *Indian J Palliat Care.* 2010 Sep-Dec;16(3):129-137.
6. Periactin. Data sources include Micromedex™ (updated Apr 2nd, 2011), Cerner Multum™ (updated Apr 25th, 2011), Wolters Kluwer™ (updated May 4th, 2011) and others. Available at: <http://www.drugs.com/mtm/periactin.html> Accessed on: 5/6/11.
7. Pronskey ZM and Crowe Sr JP. Food Medication Interactions™. 16th Edition. 2010
8. Thomas David R. Invited Review. Guidelines for the Use of Orexigenic Drugs in Long-Term Care. *Nutr Clin Pract.* 2006 Feb;21(1):82-7.
9. Natural Medicines Comprehensive Database. Therapeutic Research Faculty. Available at: <http://naturaldatabase.therapeuticresearch.com/nd/Search.aspx?cs=&s=ND&rlj=1&pt=1> Accessed on: 5/6/11.
10. Decadron. Data sources include Micromedex™ (updated Apr 2nd, 2011), Cerner Multum™ (updated Apr 25th, 2011), Wolters Kluwer™ (updated May 4th, 2011) and others. Available at: <http://www.drugs.com/cdi/decadron.html> Accessed on: 5/6/11.
11. Dixon, Suzanne W. Decreased Appetite. Caring 4 Cancer website. Last modified: February 19, 2008. Available at: <http://www.caring4cancer.com/go/cancer/effects/common/poor-appetite.htm> Accessed on: 5/6/11.
12. Sarcev T, Secen N, Sabo A, and Povazan D. Influence of dexamethasone on appetite and body weight in lung cancer patients [Article in Serbian].[Abstract] *Med Pregl* 2008 Nov-Dec;61(11-12):571-5.
13. ONS Putting Guidelines into Practice; Anorexia. Clinical Practice Guidelines. Available at: <http://www.ons.org/Research/PEP/media/ons/docs/research/outcomes/anorexia/guidelines.pdf> Accessed on: 5/6/11.
14. List of Appetite Stimulants. Last updated on: 10/10/10. Available at: <http://www.livestrong.com/article/274979-list-of-appetite-stimulants> Accessed on: 5/6/11.



15. Practice Guideline: Standards, Options and Recommendations for the use of appetite stimulants in oncology. (2000) *Br J Cancer* (2003)89(Suppl 1), S98-S100. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2753007/pdf/89-6601090a.pdf>
16. Mason, Joel. Malnutrition and the Cancer Patient: Appetite Stimulants. July 1, 2002. Available at: <http://www.thedoctorwillseeyounow.com/content/nutrition/art2048.html?getPage=3> Accessed on: 5/6/11.
17. Megace® . Prescribing Information. Revised: 01/2007. Bristol-Myers Squibb® Company. Available at: <http://www.drugs.com/pro/megace.html> Accessed on: 5/6/11.
18. PDR Nurse's Drug Handbook. Thomson Reuters, 2009 edition.
19. Morley, JE, and Thomas, DR. Development of Guidelines for the Use of Orexigenic Drugs in Long-Term Care. June 2003. Available at: [www.LTCnutrition.org](http://www.LTCnutrition.org) Accessed on: 5/4/11.
20. Lesniak W, Bala M, Jaeschke R and Krzakowski M. Effects of megestrol acetate in patients with cancer anorexia-cachexia syndrome-a systematic review and meta-analysis. *Pol Arch Med Wewn.* 2008 Nov;118(11):636-44.
21. Topkan E, Yavuz A, Ozyilkan O. Cancer Cachexia: Pathophysiologic Aspects and Treatment Options. *Asian Pacific J of Cancer Prev*, 2007;8:445-451.
22. Methylprednisolone. ChemoCare.com website. Content provided by Cleveland Clinic Cancer Center. Available at: <http://www.chemocare.com/bio/methylprednisolone.asp> Accessed on: 5/7/11.
23. Prednisolone. Data sources include Micromedex™(updated Apr 2nd, 2011), Cerner Multum™(updated Apr 25th, 2011), Wolters Kluwer™ (updated May 4th, 2011) and others Available at: <http://www.drugs.com/ppa/prednisolone.html> Accessed on: 5/7/11.
24. Tumor-Induced Effects on Nutritional Status. Nutrition in Cancer Care (PDQ®) Health Professional version. Last modified: 12/09/10. National Cancer Institute. Available at: [http://www.cancer.gov/cancertopics/pdq/supportivecare/nutrition/HealthProfessional/Page2#Section\\_4](http://www.cancer.gov/cancertopics/pdq/supportivecare/nutrition/HealthProfessional/Page2#Section_4) Last accessed: 5/8/11.
25. Gordon JN, Green SR and Googin PM. Cancer cachexia. *QJM.* 2005 Nov;98(11):779-88
26. Clinical Trials.gov Search. Available at: <http://clinicaltrials.gov/ct2/search> Last accessed: 5/8/2011.
27. Loprinzi CL, Jatoi A. Pharmacologic management of cancer anorexia/cachexia. Last topic updated: 6/1/2010. Last literature review: 1/11. Available at [www.uptodate.com](http://www.uptodate.com) Accessed: 5/9/11.
28. Cyproheptadine hydrochloride. DrugPoint® Summary. MicroMedix™ 2.0 Last modified: 2/24/11.
29. Megestrol Drugdex® Evaluations. MicroMedix™ 2.0 Last modified: 6/23/10.
30. Unintentional weight loss Treatment Summary. Diseasedex™ General Medicine Clinical Review Micromedex 2.0 Last modified 2/8/2010.



## Chemotherapy & Biotherapy Medications

**NOTE:** Some natural medicines interact with ANY MEDICATION TAKEN BY MOUTH: activated charcoal, agar, alder buckthorn, algin, aloe, American chestnut, barley, bistort, black walnut, butternut, carrageenan, cascara, coffee, charcoal, DMSO, European buckthorn, European chestnut, European mandrake, flaxseed, glucomannan, Iceland moss, jalap, karaya gum, marshmallow, Mexican scammony root, Mormon tea, pinus bark, quillaia, quince, rhatany, rhubarb, rice bran, slippery elm, tannic acid, tragacanth, and water avens.<sup>4</sup>

Generic/Brand Name	Nutrition-related side effects
<p><b><u>anastrozole</u></b> Tablet</p> <p><u>U.S. brand name</u> Arimidex®</p>	<p>In general, drink at least 2-3 quarts of fluid every 24 hours.</p> <p><u>Constipation:</u> Use prescribed medications if needed &amp; drink more fluids.</p> <p><u>Diarrhea:</u> Use prescribed medication for diarrhea, if needed &amp; drink more fluids.</p> <p><u>Nausea/vomiting:</u> Use <u>all</u> prescribed medications to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p>
<p><b><u>asparaginase</u></b> Injection into muscle or infused into a vein</p> <p><u>Other names:</u> L-ASP</p> <p><u>U.S. brand name</u> Elspar® Kidrolase®</p>	<p>In general, drink at least 2-3 quarts of fluid every 24 hours.</p> <p><u>Nausea/vomiting:</u> Use <u>all</u> prescribed medications to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p> <p><u>Increases blood sugar levels.</u> If diabetic, <u>closely monitor</u> blood sugar levels daily.</p>
<p><b><u>bevacizumab</u></b> Infused into a vein</p> <p><u>U.S. brand name</u> Avastin®</p>	<p>In general, drink at least 2-3 quarts of fluid every 24 hours.</p> <p><u>Constipation:</u> Use prescribed medications if needed &amp; drink more fluids.</p> <p><u>Diarrhea:</u> Use prescribed medication for diarrhea, if needed &amp; drink more fluids.</p> <p><u>Dry mouth</u></p> <p><u>Mouth sores:</u> Keep the mouth clean after eating &amp; before bedtime. Vigorously swish prescribed <u>special</u> mouth rinse.</p> <p><u>Nausea/vomiting (MINIMAL RISK):</u> Use prescribed medication to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p> <p><u>Taste changes</u></p>
<p><b><u>bicalutamide</u></b> Tablet</p> <p><u>U.S. brand name</u> Casodex®</p>	<p>This medication is usually given to males.</p> <p>Empty the bladder <u>before</u> swallowing this tablet with water.</p> <p>Take this medication at the <u>same</u> time every day.</p> <p>In general, drink at least 2-3 quarts of fluid every 24 hours.</p> <p><u>Constipation:</u> Use prescribed medications if needed &amp; drink more fluids.</p> <p><u>Diarrhea:</u> Use prescribed medication for diarrhea, if needed &amp; drink more fluids.</p> <p><u>Nausea:</u> Use prescribed medication <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p> <p><u>Increases blood sugars.</u> If diabetic, closely monitor blood sugar levels daily.</p>

<p><b>bortezomib</b> Infused into a vein</p> <p><u>U.S. brand name</u> Velcade®</p>	<p>In general, drink at least 2-3 quarts of fluid every 24 hours. <u>Constipation</u>: Use prescribed medications if needed &amp; drink more fluids. <u>Diarrhea</u>: Use prescribed medication for diarrhea, if needed &amp; drink more fluids. <u>Nausea/vomiting (LOW RISK)</u>: Use prescribed medication to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset. <u>Taste changes</u></p>
<p><b>capecitabine</b> Tablet</p> <p><u>U.S. brand name</u> Xeloda®</p>	<p>Take tablet <u>after eating food, within 30 minutes</u> of a meal with water. <u>Do not</u> crush or dissolve tablets. In general, drink at least 2-3 quarts of fluid every 24 hours. <u>Diarrhea</u>: Use prescribed medication for diarrhea, if needed &amp; drink more fluids. <u>Heartburn</u>: If using antacids for heartburn, wait at least <u>2 hours</u> after taking this medication. <u>Mouth sores</u>: Keep the mouth clean after eating &amp; before bedtime. Vigorously swish prescribed <u>special</u> mouth rinse. <u>Nausea/vomiting</u>: Use <u>all</u> prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p>
<p><b>carboplatin</b> Infused into vein, or directly into the peritoneal cavity in the abdomen</p> <p><u>U.S. brand names</u> Paraplat <u>Paraplatin</u>®</p>	<p>In general, drink at least 2-3 quarts of fluid every 24 hours. <u>Constipation</u>: Use prescribed medications if needed &amp; drink more fluids. <u>Diarrhea</u>: Use prescribed medication for diarrhea, if needed &amp; drink more fluids. <u>Mouth sores</u>: Keep the mouth clean after eating &amp; before bedtime. Vigorously swish prescribed <u>special</u> mouth rinse. <u>Nausea/vomiting (MODERATE RISK)</u>: Use <u>all</u> prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p>
<p><b>cetuximab</b> Infusion into a vein</p> <p><u>U.S. brand name</u> Erbix®</p>	<p>In general, drink at least 2-3 quarts of fluid every 24 hours. <u>Constipation</u>: Use prescribed medications if needed &amp; drink more fluids. <u>Diarrhea</u>: Use prescribed medication for diarrhea, if needed &amp; drink more fluids. <u>Heartburn</u> <u>Mouth sores</u>: Keep the mouth clean after eating &amp; before bedtime. Vigorously swish prescribed <u>special</u> mouth rinse. <u>Nausea/vomiting (LOW RISK)</u>: Use <u>all</u> prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p>
<p><b>cisplatin</b> Infused into a vein</p> <p><u>Other names:</u> CDDP DDP</p> <p><u>U.S. brand name</u> <u>Platinol</u>® <u>Platinol</u>®-AQ</p>	<p>In general, drink at least 2-3 quarts of fluid every 24 hours. <u>Diarrhea</u>: Use prescribed medication for diarrhea, if needed &amp; drink more fluids. <u>Nausea/vomiting (HIGH RISK) up to 1 week later</u>: Use <u>all</u> of the prescribed medications for nausea to <u>prevent</u> on-set of nausea and continue with <u>around-the-clock</u> coverage for up to <u>4-7 days</u>. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset. <u>Taste changes</u></p>

<p><b>cyclophosphamide</b> Tablet, injection into a muscle or the lining of the abdomen or lung, infusion into a vein</p> <p><u>U.S. brand name</u> Clafen Cytosan<sup>®</sup> Neosar<sup>®</sup></p>	<p><u>Empty the bladder frequently</u>, during the first 24 hours after taking the tablet. Take the tablet on <u>empty</u> stomach. Drink about 2-3 L/day to increase frequent urination. <u>Mouth sores</u>: Keep the mouth clean after eating &amp; before bedtime. Vigorously swish prescribed <u>special</u> mouth rinse. <u>Nausea/vomiting</u>-at high doses (HIGH RISK); at lower doses (MODERATE RISK): Use <u>all</u> of prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p>
<p><b>docetaxel</b> Infusion into a vein</p> <p><u>U.S. brand name</u> Taxotere<sup>®</sup></p>	<p><b>Note:</b> <i>Before treatment:</i> Use the prescribed <u>steroid</u> medication to reduce severity of swelling &amp; allergic reaction. In general, drink at least 2-3 quarts of fluid every 24 hours. <u>Diarrhea</u>: Use prescribed medication for diarrhea, if needed &amp; drink more fluids. <u>Fluid retention</u> <u>Mouth sores</u>: Keep the mouth clean after eating &amp; before bedtime. Vigorously swish prescribed <u>special</u> mouth rinse. <u>Nausea/vomiting</u>-(LOW RISK): Use <u>all</u> prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p>
<p><b>doxorubicin</b> Infusion into a vein</p> <p><u>U.S. brand name</u> Adriamycin<sup>®</sup> PFS Adriamycin<sup>®</sup> RDF Doxil<sup>®</sup> Idamycin PFS<sup>®</sup> Rubex<sup>®</sup></p>	<p>In general, drink at least 2-3 quarts of fluid every 24 hours. <u>Mouth sores</u>: Keep the mouth clean after eating &amp; before bedtime. Vigorously swish prescribed <u>special</u> mouth rinse. <u>Nausea/vomiting</u>-(MODERATE RISK), however HIGH RISK when used with cyclophosphamide (Cytosan<sup>®</sup>, Neosar<sup>®</sup>). Use <u>all</u> prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p>
<p><b>erlotinib</b> Tablet</p> <p><u>U.S. brand name</u> Tarceva<sup>®</sup></p>	<p>Take tablet on an <u>empty</u> stomach, 1 hour <u>before</u> eating or wait 2 hours <u>after</u> eating. In general, drink at least 2-3 quarts of fluid every 24 hours. <u>Diarrhea</u>: Use prescribed medication for diarrhea, if needed &amp; drink more fluids. <u>Mouth sores</u>: Keep the mouth clean after eating &amp; before bedtime. Vigorously swish prescribed <u>special</u> mouth rinse. <u>Nausea/vomiting</u>: Use <u>all</u> prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p>
<p><b>etoposide</b> Tablet, infusion into a vein</p> <p><u>U.S. brand name</u> Toposar<sup>®</sup> VePesid<sup>®</sup> Etopophos<sup>®</sup></p>	<p>In general, drink at least 2-3 quarts of fluid every 24 hours. <u>Diarrhea</u>-with high doses: Use prescribed medication for diarrhea, if needed &amp; drink more fluids. <u>Metallic taste</u>: during infusion <u>Mouth sores</u>, at high doses: Keep the mouth clean after eating &amp; before bedtime. Vigorously swish prescribed <u>special</u> mouth rinse. <u>Nausea/vomiting</u> (LOW RISK), unless at high dose: Use <u>all</u> prescribed medications for nausea to <u>prevent</u> on-set of nausea. Use prescribed medication for diarrhea, if needed &amp; drink more fluids. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p>

<p><b>fluorouracil</b> Injection or infusion into a vein, topical ointment</p> <p><u>Other names:</u> 5-FU</p> <p><u>U.S. brand name</u> Adrucil® Efudex Fluoroplex</p>	<p><b>Note:</b> <u>Leucovorin</u> (folinic acid) may be used to increase the anti-cancer effects. It may INCREASE the severity of side effects. In general, drink at least 2-3 quarts of fluid every 24 hours.</p> <p><u>Diarrhea</u>-with high doses: Use prescribed medication for diarrhea, if needed &amp; drink more fluids.</p> <p><u>Metallic taste:</u> during infusion</p> <p><u>Mouth sores:</u> Use ice chips in mouth 10-15 minutes <u>before &amp; after</u> injections to reduce severity &amp; risk for mouth sores. Keep the mouth clean after eating &amp; before bedtime. Vigorously swish prescribed <u>special</u> mouth rinse.</p> <p><u>Nausea, occasional vomiting</u> (LOW RISK): Use prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p>
<p><b>fulvestrant</b> Injection into the muscle</p> <p><u>U.S. brand name</u> Faslodex®</p>	<p>In general, drink at least 2-3 quarts of fluid every 24 hours.</p> <p><u>Constipation:</u> Use prescribed medications if needed &amp; drink more fluids.</p> <p><u>Diarrhea:</u> Use prescribed medication for diarrhea, if needed &amp; drink more fluids.</p> <p><u>Nausea/vomiting</u> (MILD): Use <u>all</u> prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p> <p><u>Sore throat</u></p>
<p><b>gefitinib</b> Tablet</p> <p><u>U.S. brand name</u> Iressa®</p>	<p>In general, drink at least 2-3 quarts of fluid every 24 hours.</p> <p><u>Diarrhea:</u> Use prescribed medication for diarrhea, if needed &amp; drink more fluids.</p> <p><u>Nausea/vomiting</u> (MILD): Use <u>all</u> prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset</p>
<p><b>gemcitabine</b> Infusion into a vein</p> <p><u>U.S. brand name</u> Gemzar®</p>	<p>In general, drink at least 2-3 quarts of fluid every 24 hours.</p> <p><u>Diarrhea:</u> Use prescribed medication for diarrhea, if needed &amp; drink more fluids.</p> <p><u>Fluid retention</u></p> <p><u>Mouth sores:</u> Keep the mouth clean after eating &amp; before bedtime. Vigorously swish prescribed <u>special</u> mouth rinse.</p> <p><u>Nausea/vomiting</u> (LOW RISK): Use <u>all</u> prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p>
<p><b>imatinib mesylate</b> Tablet</p> <p><u>U.S. brand name</u> Gleevec®</p>	<p>Take tablet <u>after</u> a meal with a large glass of water at the <u>same time</u> every day.</p> <p>In general, drink at least 2-3 quarts of fluid every 24 hours.</p> <p><u>Constipation:</u> Use prescribed medications if needed &amp; drink more fluids.</p> <p><u>Diarrhea:</u> Use prescribed medication for diarrhea, if needed &amp; drink more fluids.</p> <p><u>Fluid retention</u></p> <p><u>Heartburn / gas</u></p> <p><u>Nausea/vomiting:</u> Use <u>all</u> prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p>

<p><b>irinotecan</b> Infusion into a vein</p> <p><u>U.S. brand name</u> Camptosar<sup>®</sup></p>	<p>In general, drink at least 2-3 quarts of fluid every 24 hours. <u>Constipation</u>: Use prescribed medications if needed &amp; drink more fluids. <u>Mouth sores</u>: Keep the mouth clean after eating &amp; before bedtime. Vigorously swish prescribed <u>special</u> mouth rinse. <u>Nausea/vomiting</u> (MODERATE RISK): Use <u>all</u> prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset. <u>Diarrhea</u>-<u>early</u> within 24 hours; <u>late</u>-up to 11 days later: Use prescribed medications for diarrhea, if needed &amp; drink more fluids.</p>
<p><b>methotrexate</b> Tablet, injection into the muscle, infusion into a vein, or spinal fluid</p> <p><u>Other names</u>: <i>MTX</i> <i>Amethopterin</i></p> <p><u>U.S. brand names</u> Abitrexate Folex Folex PFS Methotrexate LPF Mexate Mexate-AQ Rheumatrex<sup>®</sup> Trexall<sup>™</sup></p>	<p><b>Note</b>: Leucovorin (folinic acid) may be given 24 hours later to REDUCE or LOWER side effects. Swallow tablet with water on an <u>empty</u> stomach. Food delays absorption.</p> <p>In general, drink at least 2-3 quarts of fluid every 24 hours. <u>Diarrhea</u>: Use prescribed medication for diarrhea, if needed &amp; drink more fluids. <u>Mouth sores</u> (about 3-7 days later): Keep the mouth clean after eating &amp; before bedtime. Vigorously swish prescribed <u>special mouth rinse</u>. <u>Nausea/vomiting</u> (LOW RISK with low dose): Use prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p>
<p><b>oxaliplatin</b> Infusion into a vein.</p> <p><u>U.S. brand name</u> Eloxatin<sup>®</sup></p>	<p><b>Note</b>: Symptoms <u>related to COLD exposure</u>: chest pressure sensation, difficulty swallowing, shortness of breath, jaw spasm and abnormal tongue sensation. Dress warmly for treatment and cover exposed skin including face. During treatment, drink <u>warm</u> fluids with a <u>straw</u>. Avoid using the air conditioner on '<u>high</u>' during hot weather. Wear <u>warm clothing</u> in cold weather at all times, and <u>cover mouth &amp; nose</u>. In general, drink at least 2-3 quarts of fluid every 24 hours. <u>Constipation</u>: Use prescribed medications if needed &amp; drink more fluids. <u>Diarrhea</u>: Use prescribed medication for diarrhea, if needed &amp; drink more fluids. <u>Mouth sores</u>: Keep the mouth clean after eating &amp; before bedtime. Vigorously swish prescribed <u>special</u> mouth rinse <u>Nausea/vomiting</u> (MODERATE RISK): Use <u>all</u> prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to prevent stomach upset.</p>
<p><b>paclitaxel</b> Injection of infusion into a vein.</p> <p><u>US brand names</u> Abraxane<sup>®</sup> Taxol<sup>®</sup> Onxal<sup>™</sup></p>	<p>In general, drink at least 2-3 quarts of fluid every 24 hours. <u>Diarrhea</u>: Use prescribed medication for diarrhea, if needed &amp; drink more fluids. <u>Fluid retention</u> <u>Mouth sores</u>: Keep the mouth clean after eating &amp; before bedtime. Vigorously swish prescribed <u>special</u> mouth rinse. <u>Nausea/vomiting</u> (LOW RISK): Use <u>all</u> prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p>

<p><b>PEG interferon</b> Injection under the skin</p> <p><u>Other names:</u> <i>interferon alfa-2b</i></p> <p><u>U.S. brand name</u> PEG-Intron®</p>	<p>Give injections at <u>bedtime</u>. In general, drink at least 2-3 quarts of fluid every 24 hours. <u>Diarrhea</u>: Use prescribed medication for diarrhea, if needed &amp; drink more fluids. <u>Nausea</u>: Use <u>all</u> prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p>
<p><b>rituximab</b> Infusion into a vein</p> <p><u>U.S. brand name</u> Rituxan®</p>	<p>In general, drink at least 2-3 quarts of fluid for the first 48 hours after treatment, unless otherwise instructed. <u>Nausea</u> (MINIMAL RISK): Use prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset. <u>Throat irritation</u></p>
<p><b>tamoxifen</b> Tablet</p> <p><u>U.S. brand name</u> Nolvadex®</p>	<p>Swallow the <u>whole</u> tablet with 8 oz. of water. Take this medication at the <u>same time</u> every day. In general, drink at least 2-3 quarts of fluid every 24 hours. <u>Fluid retention</u> <u>Nausea</u>: Use prescribed medication for nausea, to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset. <u>Calcium and/or magnesium supplement use</u>: Take <u>separately</u> by 2 hours from this medication.</p>
<p><b>temozolomide</b> Capsule</p> <p><u>U.S. brand name</u> Temodar® Methazolastone</p>	<p><b>Note</b>: Swallow <u>whole</u> capsule with 8 oz. of water on an <u>empty</u> stomach. Do not open, crush or chew the capsule. <u>To reduce nausea</u>: Take this medication 1 hour <u>before</u> or 2 hours <u>after</u> meals, or <u>at bedtime</u>. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset. In general, drink at least 2-3 quarts of fluid every 24 hours. <u>Constipation</u>: Use prescribed medications if needed &amp; drink more fluids. <u>Diarrhea</u> (delayed effect) : Use prescribed medication for diarrhea, if needed &amp; drink more fluids. <u>Fluid retention</u> (delayed effect)</p>
<p><b>trastuzumab</b> Infusion into a vein</p> <p><u>U.S. brand name</u> Herceptin®</p>	<p>In general, drink at least 2-3 quarts of fluid every 24 hours, unless otherwise instructed. <u>Constipation</u>: Use prescribed medications if needed &amp; drink more fluids. <u>Diarrhea</u> (delayed effect): Use prescribed medication for diarrhea, if needed &amp; drink more fluids. <u>Fluid retention</u> <u>Nausea/vomiting</u> (LOW RISK): Use prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset. <u>Sore throat</u></p>



<p><b>vinblastine</b>  Infusion or injection into a vein</p> <p><u>Other names:</u>  VLB</p> <p><u>U.S. brand names</u>  Alkaban-AQ<sup>®</sup>  Velban<sup>®</sup>  Velsar<sup>®</sup></p>	<p>In general, drink at least 2-3 quarts of fluid every 24 hours.</p> <p><u>Constipation</u> (1-3 days later): Use prescribed medications if needed &amp; drink more fluids.</p> <p><u>Diarrhea</u>: Use prescribed medication for diarrhea, if needed &amp; drink more fluids.</p> <p><u>Mouth sores</u>: Keep the mouth clean after eating &amp; before bedtime. Vigorously swish prescribed <u>special</u> mouth rinse.</p> <p><u>Nausea/vomiting</u> (MINIMAL RISK) within first 24 hours: Use <u>all</u> prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p> <p><u>Metallic taste</u></p>
---	---

**References:**

1. NCI Drug Dictionary. Accessed: 10/2010 Available at: <http://www.cancer.gov/drugdictionary>
2. Chemocare.com Accessed: 10/2010. Content by Cleveland Clinic Cancer Center. Available at: <http://www.chemocare.com/bio>
3. Food Medication Interactions, 16th edition. Zaneta M. Pronsky, MS, RD, LDN, FADA and Sr. Jeanne P. Crowe, Pharm D. RPH.
4. Natural Medicines Comprehensive Database. Jeff M. Jellin, PharmD, Editor-in-Chief. Accessed: 10/2010 Available at: <http://naturaldatabase.therapeuticresearch.com/home.aspx?cs=>
5. Chemotherapy and Biotherapy Guidelines and Recommendations for Practice. 2nd edition. Martha Polovich, Julie M White, Linda O Kelleher. (eds) ONS Publishing.
6. Kris Mark G, Hesketh Paul J, Somerfield, Mark R, Feyer Petra, Clark-Snow, Rebecca, Koeller, James M, Morrow, Gary R, Chinnery Lawrence W, Chesney Maurice J, Gralla Richard J, and Grunberg Steven M. "Table 5. Emetic Risk of Intravenously Administered Antineoplastic Agents". American Society of Clinical Oncology Guidelines for Antiemetics in Oncology: Update 2006. *J Clin Onc* 24:2932-2947.
7. AHFS<sup>®</sup> Consumer Medication Information. 2010. Accessed at: <http://www.ncbi.nlm.nih.gov/pubmedhealth/>
8. Drug Information by MicroMedex . Accessed at <http://www.mayoclinic.com>

**CTC Adverse Events Grade Charts**  
**Lab Values and Measured Conditions**

Adverse Event	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
<b>Anemia</b>	Hgb <10.0	Hgb <10.0 - 8.0	Hgb <8.0 transfusion indicated	Life-threatening consequences; urgent intervention indicated	Death
Definition: A disorder characterized by a reduction in the amount of hemoglobin in 100ml of blood. Signs and symptoms of anemia may include pallor of the skin and mucous membranes, shortness of breath, palpitations of the heart, soft systolic murmurs, lethargy, and fatigability.					
<b>Hypercalcemia</b>	Corrected serum calcium of >ULN – 11.5 mg/dL	Corrected serum calcium of >11.5 – 12.5 mg/dL symptomatic	Corrected serum calcium of >12.5 – 13.5 mg/dL hospitalization indicated	Corrected serum calcium of >13.5 mg/dL life-threatening consequences	Death
Definition: A disorder characterized by laboratory test results that indicate an elevation in the concentration of calcium (corrected for albumin) in blood. ULN (Upper Limit of Normal)					
<b>Hypocalcemia</b>	Corrected serum calcium of <LLN – 8.0 mg/dL	Corrected serum calcium of <8.0 – 7.0 mg dL; <2.0 – 1.75 mmol/L symptomatic	Corrected serum calcium of <7.0 – 6.0 mg/dL; <1.75 – 1.5 mmol/L hospitalization indicated	Corrected serum calcium of <6.0 mg/dL; <1.5 mmol/L life-threatening consequences	Death
Definition: A disorder characterized by laboratory test results that indicate a low concentration of calcium (corrected for albumin) in the blood.					
<b>Hyperglycemia</b>	Fasting glucose value > ULN – 160mg/dL	Fasting glucose value >160 – 250 mg/dL	> 250-500 mg/dL hospitalization indicated	> 500 mg/dL life threatening consequences	Death
Definition: A disorder characterized by laboratory test results that indicate an elevation in the concentration of blood sugar. It is usually an indication of diabetes mellitus or glucose intolerance. ULN (Upper Limit of Normal)					
<b>Hypoglycemia</b>	<LLN – 55mg/dL	<55 – 40 mg/dL	<40 – 30 mg/dL	<30mg/dL life threatening consequences; seizures	Death
Definition: A disorder characterized by laboratory test results that indicate a low concentration of glucose in the blood. LLN (Lower limit of normal)					
<b>Hyperkalemia</b>	>ULN – 5.5 mmol/L	>5.5 – 6.0 mmol/L	>6.0 – 7.0 mmol/L; hospitalization indicated	>7.0 mmol/L; life-threatening consequences	Death
Definition: A disorder characterized by laboratory test results that indicate an elevation in the concentration of potassium in the blood; associated with kidney failure or sometimes with the use of diuretic drugs.					
<b>Hypokalemia</b>	<LLN – 3.0 mmol/L	<LLN – 3.0 mmol/L; symptomatic; intervention indicated	<3.0 – 2.5 mmol/L; hospitalization indicated	<2.5 mmol/L; life-threatening consequences	Death
Definition: A disorder characterized by laboratory tests results that indicate a low concentration of potassium in the blood.					
<b>Hypermagnesemia</b>	>ULN – 3.0 mg/dL; >ULN – 1.23 mmol/L	-	>3.0 – 8.0 mg/dL; >1.23 – 3.30 mmol/L	>8.0 mg/dL; >3.30 mmol/L; life-threatening consequences	Death
Definition: A disorder characterized by laboratory test results that indicate an elevation in the concentration of magnesium in the blood.					
<b>Hypomagnesemia</b>	<LLN – 1.2 mg/dL;	<1.2 – 0.9 mg/dL;	<0.9 – 0.7 mg/dL;	< 0.7 mg/dL;	Death

	<LLN – 0.5 mmol/L	<0.5 – 0.4 mmol/L	<0.4 – 0.3 mmol/L	<0.3 mmol/L; life-threatening consequences	
Definition: A disorder characterized by laboratory tests results that indicate a low concentration of magnesium in the blood.					
<b>Hypernatremia</b>	>ULN – 150 mmol/L	> 150-155 mmol/L	> 155-160 mmol/L; hospitalization indicated	> 160 mmol/L; life-threatening consequences	Death
Definition: A disorder characterized by laboratory test results that indicate an elevation in the concentration of sodium in the blood.					
<b>Hyponatremia</b>	<LLN – 130 mmol/L	-	<130 – 120 mmol/L	<120 mmol/L; life-threatening consequences	Death
Definition: A disorder characterized by laboratory tests results that indicate a low concentration of sodium in the blood.					
<b>Hyphosphatemia</b>	<LLN – 2.5 mg/dL; <LLN – 0.8 mmol/L	<2.5 – 2.0 mg/dL; <0.8 – 0.6 mmol/L	<2.0 – 1.0 mg/dL; <0.6 – 0.3 mmol/L	<1.0 mg/dL; <0.3 mmol/L; life-threatening consequences	Death
Definition: A disorder characterized by laboratory tests results that indicate a low concentration of phosphates in the blood.					
<b>Hypoalbuminemia</b>	<LLN – 3 g/dL; <LLN – 30 g/L	<3 – 2 g/dL; <30-20 g/L	<2 g/dL; <20 g/L	Life-threatening consequences; urgent intervention indicated	Death
Definition: A disorder characterized by laboratory tests results that indicate a low concentration of albumin in the blood.					
<b>INR increased</b>	>1-1.5 x ULN; >1-1.5 times above baseline if on anticoagulation	>1.5-2.5 x ULN; >1.5-2.5 times above baseline if on anticoagulation	>2.5 x ULN; >2.5 times above baseline if on anticoagulation	-	-
Definition: A finding based on laboratory test results that indicate an increase in the ratio of the patient's prothrombin time to a control sample in the blood.					
<b>Lymphocyte count decreased</b>	<LLN – 800/mm <sup>3</sup> ; <LLN – 0.8 x 10 <sup>9</sup> /L	<800 – 500/mm <sup>3</sup> ; <0.8 – 0.5 x 10 <sup>9</sup> /L	<500 – 200/mm <sup>3</sup> ; <0.5 – 0.2 x 10 <sup>9</sup> /L	<200/mm <sup>3</sup> ; <0.2 x 10 <sup>9</sup> /L	-
Definition: A finding on laboratory test results that indicate a decrease in number of lymphocytes in a blood specimen.					
<b>Lymphocyte count increased</b>	-	>4000/mm <sup>3</sup> – 20,000/mm <sup>3</sup>	>20,000/mm <sup>3</sup>	-	-
Definition: A finding based on laboratory test results that indicate an abnormal increase in the number of lymphocytes in the blood, effusions or bone marrow.					
<b>Neutrophil count decreased</b>	<LLN – 1500/mm <sup>3</sup> ; <LLN – 1.5 x 10 <sup>9</sup> /L	<1500-1000/mm <sup>3</sup> ; <1.5 – 1.010e9/L	<1000 – 500/mm <sup>3</sup> ; <1.0-0.5 x 10 <sup>9</sup> /L	<500/mm <sup>3</sup> ; <0.5 x 10 <sup>9</sup> /L	-
Definition: A finding based on laboratory test results that indicate a decrease in number of neutrophils in a blood specimen.					
<b>Pancreatic enzymes decreased</b>	<LLN and asymptomatic	Increase in stool frequency, bulk, or odor; steatorrhea	Sequelae of absorption deficiency	-	-
Definition: A finding based on laboratory test results that indicate a decrease in levels of pancreatic enzymes in a biological specimen.					
<b>Platelet count decreased</b>	<LLN – 75,000/mm <sup>3</sup> ; <LLN – 75.0 x 10 <sup>9</sup> /L	<75,000 – 50,000/mm <sup>3</sup> ; <75.0 – 50.0 x 10 <sup>9</sup> /L	<50,000 – 25,000/mm <sup>3</sup> ; <50.0 – 25.0 x 10 <sup>9</sup> /L	<25,000/mm <sup>3</sup> ; <25.0 x 10 <sup>9</sup> /L	-
Definition: A disorder characterized by laboratory tests results that indicate a low number of platelets in a blood specimen.					

<b>White blood cell decreased</b>	<LLN – 3000/mm <sup>3</sup> ; <LLN – 3.0 x 10 <sup>9</sup> /L	<3000 – 2000/mm <sup>3</sup> ; <3.0 – 2.0 x 10 <sup>9</sup> /L	<2000 – 1000/mm <sup>3</sup> ; <2.0 – 1.0 x 10 <sup>9</sup> /L	<1000/mm <sup>3</sup> ; <1.0 x 10 <sup>9</sup> /L	-
Definition: A finding based on laboratory tests results that indicates a decrease in number of white blood cells in a blood specimen.					
<b>Osteoporosis</b>	Radiologic evidence of osteoporosis or Bone Mineral Density (BMD) t-score -1 to -2.5 (osteopenia); no loss of height or intervention indicated	BMD t-score < -2.5; loss of height <2 cm; anti-osteoporotic therapy indicated; limiting instrumental ADL	Loss of height >=2cm; hospitalization indicated; limiting self care ADL	-	-
Definition: A disorder characterized by reduced bone mass, with a decrease in cortical thickness and in the number and size of the trabeculae of cancellous bone (but normal chemical composition), resulting in increased fracture incidence.					

### Nutrition Related Disorders and Conditions

Adverse Event	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
<b>Anorexia</b>	Loss of appetite without alteration in eating habits	Oral intake altered without significant weight loss or malnutrition; oral nutritional supplements indicated	Associated with significant weight loss or malnutrition (e.g., inadequate oral caloric and/or fluid intake); tube feeding or TPN indicated	Life-threatening consequences; urgent intervention indicated	Death
Definition: A disorder characterized by a loss of appetite.					
<b>Aspiration</b>	Asymptomatic; clinical or diagnostic observations only; intervention not indicated	Altered eating habits; coughing or choking episodes after eating or swallowing; medical intervention indicated (e.g., suction or oxygen)	Dyspnea and pneumonia symptoms (e.g., aspiration pneumonia); hospitalization indicated; unable to aliment orally	Life-threatening respiratory or hemodynamic compromise; intubation or urgent intervention indicated	Death
Definition: A disorder characterized by inhalation of solids or liquids into the lungs.					
<b>Constipation</b>	Occasional or intermittent symptoms; occasional use of stool softeners, laxatives,	Persistent symptoms with regular use of laxatives or enemas; limiting instrumental	Obstipation with manual evacuation indicated; limiting self care ADL	Life-threatening consequences; urgent intervention indicated	Death

	dietary modification, or enema	ADL			
Definition: A disorder characterized by irregular and infrequent or difficult evacuation of the bowels.					
<b>Diarrhea</b>	Increase of <4 stools per day over baseline; mild increase in ostomy output compared to baseline	Increase of 4-6 stools per day over baseline; moderate increase in ostomy output compared to baseline	Increase of >=7 stools per day over baseline; incontinence; hospitalization indicated; severe increase in ostomy output compared to baseline; limiting self care ADL	Life-threatening consequences; urgent intervention indicated	Death
Definition: A disorder characterized by frequent and watery bowel movements.					
<b>Dehydration</b>	Increased oral fluids indicated; dry mucous membranes; diminished skin turgor	IV fluids indicated < 24 hrs	IV fluids or hospitalization indicated	Life-threatening consequences; urgent intervention indicated	Death
Definition: A disorder characterized by excessive loss of water from the body. It is usually caused by severe diarrhea, vomiting or diaphoresis.					
<b>Dry Mouth</b>	Symptomatic (e.g., dry or thick saliva) without significant dietary alteration; unstimulated saliva flow >0.2ml/min	Moderate symptoms; oral intake alterations (e.g., copious water, other lubricants, diet limited to purees and/or soft, moist foods); unstimulated saliva 0.1 to 0.2 ml/min	Inability to adequately aliment orally; tube feeding or TPN indicated; unstimulated saliva <0.1ml/min	-	-
Definition: A disorder characterized by reduced salivary flow in the oral cavity.					
<b>Dysphagia</b>	Symptomatic, able to eat regular diet	Symptomatic and altered eating/swallowing	Severely altered eating/swallowing; tube feeding or TPN or hospitalization indicated	Life-threatening consequences; urgent intervention indicated	Death
Definition: A disorder characterized by difficulty in swallowing.					
<b>Esophagitis</b>	Asymptomatic; clinical or diagnostic observations only; intervention not	Symptomatic; altered eating/swallowing; oral supplements indicated	Severely altered eating/swallowing; tube feeding, TPN or hospitalization	Life-threatening consequences; urgent operative intervention indicated	Death

	indicated		indicated		
Definition: A disorder characterized by inflammation of the esophageal wall.					
<b>Fatigue</b>	Fatigue relieved by rest	Fatigue not relieved by rest; limiting instrumental ADL	Fatigue not relieved by rest, limiting self care ADL	-	-
Definition: A disorder characterized by a state of generalized weakness with a pronounced inability to summon sufficient energy to accomplish daily activities.					
<b>Malabsorption</b>	-	Altered diet; oral intervention indicated	Inability to aliment adequately; TPN indicated	Life-threatening consequences; urgent intervention indicated	Death
Definition: A disorder characterized by inadequate absorption of nutrients in the small intestine. Symptoms include abdominal marked discomfort, bloating and diarrhea.					
<b>Mucositis Oral</b>	Asymptomatic or mild symptoms; intervention not indicated	Moderate pain; not interfering with oral intake; modified diet indicated	Severe pain; interfering with oral intake	Life-threatening consequences; urgent intervention indicated	Death
Definition: A disorder characterized by inflammation of the oral mucosa.					
<b>Nausea</b>	Loss of appetite without alteration in eating habits	Oral intake decreased without significant weight loss, dehydration or malnutrition	Inadequate oral caloric or fluid intake; tube feeding, TPN, or hospitalization indicated	-	-
Definition: A disorder characterized by a queasy sensation and/or the urge to vomit.					
<b>Pain</b>	Mild pain	Moderate pain; limiting instrumental ADL	Severe pain; limiting self care ADL	-	-
Definition: A disorder characterized by the sensation of marked discomfort, distress or agony.					
<b>Sore throat</b>	Mild pain	Moderate pain; limiting instrumental ADL	Severe pain; limiting self care ADL; limiting ability to swallow	-	-
Definition: A disorder characterized by marked discomfort in the throat.					
<b>Vomiting</b>	1-2 episodes (separated by 5 minutes) in 24 hours	3-5 episodes (separated by 5 minutes) in 24 hours	>=6 episodes (separated by 5 minutes) in 24 hrs; tube feeding, TPN or hospitalization indicated	Life-threatening consequences; urgent intervention indicated	Death
Definition: A disorder characterized by the reflexive act of ejecting the contents of the stomach through the mouth.					
<b>Weight gain</b>	5-<10% from baseline	10-<20% from baseline	>=20% from baseline	-	-

Definition: A finding characterized by an increase in overall body weight; for pediatrics, greater than the baseline growth curve.					
<b>Weight loss</b>	5 to <10% from baseline; intervention not indicated	10-<20% from baseline; nutritional support indicated	>=20% from baseline; tube feeding or TPN indicated	-	-
Definition: A finding characterized by a decrease in overall body weight; for pediatrics, less than the baseline growth curve.					
<b>Obesity</b>	-	BMI 25-29.9kg/m2	BMI 30-39.9 kg/m2	BMI >+40kg/m2	-
Definition: A disorder characterized by having a high amount of body fat.					

Information from Common Terminology Criteria for Adverse Events (CTCAE) Version 4.0 Published: May 28, 2009(v4.03: June 14, 2010) accessed on 9/27/2010 at: [http://evs.nci.nih.gov/ftp1/CTCAE/CTCAE\\_4.03\\_2010-06-14\\_QuickReference\\_8.5x11.pdf](http://evs.nci.nih.gov/ftp1/CTCAE/CTCAE_4.03_2010-06-14_QuickReference_8.5x11.pdf)

## Dry Mouth Products and Therapies

There are significant differences in the performance of various saliva substitutes and more studies on the properties of saliva substitutes are still needed.<sup>1</sup> It is estimated that saliva substitutes provide relief for approximately 40% of patients who use them.<sup>2</sup> More research studies are needed.

BRAND NAME	COMPOSITION/INGREDIENTS	COMMENTS
<b>Acupuncture</b>	Acupuncture points: ears, chin, index finger, forearm, leg	Limited evidence; concern with safety measures; further study needed. <sup>2,3,4</sup>
<b>Aquoral™</b> <i>By prescription only</i>	Corn oil, silicon dioxide, aspartame, or artificial flavorings (citrus)	Use 2 sprays 3-4 times a day. Metered doses of .001 ml/spray . 40 ml solution (400 sprays). Flavor: citrus.
<b>Biotene® Oral Balance® Mouth Moisturizing Gel</b> <i>No prescription needed.</i>	Glyceryl polymethacrylate, polyglycitol, xylitol, hydroxyethyl cellulose, beta-d-glucose, sodium phosphate, aloe vera, potassium thiocyanate, lysozyme, lactoferrin, glucose oxidase, lactoperoxidase	Rub on gums. Safe to swallow excess gel to lubricate throat 1.5 oz tube, pH 5.5 . Laclede Research Labs <a href="http://www.biotene.com">http://www.biotene.com</a> Available at most pharmacies: Walgreens.com
<b>Biotene® Oral Balance® Liquid</b> <i>No prescription needed.</i>	Purified water, starch hydrosylate, sunflower oil, propylene glycol, xylitol, glycerine, purified milk extract (proteins, vitamins & minerals), flavor, sodium benzoate, flax seed oil, xanthan gum, rosemary extract, cellulose gum, avocado oil, lacoperoxidase, glucose oxidase, potassium thiocyanate, lysozyme, lactoferrin, potassium sorbate, zinc gluconate.	Squirt directly into the mouth as often as moisture is needed. 45 ml 1.5 oz bottle. Laclede, Inc., Healthcare Products <a href="http://www.biotene.com">http://www.biotene.com</a> Available at most pharmacies: Walgreens.com
<b>Biotene® Oral Balance® Dry Mouth Moisturizing Spray</b> <i>No prescription needed.</i>	Purified water, starch hydrosylate, sunflower oil, propylene glycol, xylitol, glycerine, purified milk extract (proteins, vitamins & minerals), flavor, sodium benzoate, flax seed oil, xanthan gum, rosemary extract, cellulose gum, avocado oil, lactoperoxidase, glucose oxidase, potassium thiocyanate, lysozyme, lactoferrin, potassium sorbate, zinc gluconate	Squirt directly into the mouth as often as moisture is needed. Swallow excess liquid to help with throat lubrication. Repeat several times daily as needed. <u>Note</u> : Use after meals & before bedtime. 1.5 oz spray bottle. Laclede, Inc., Healthcare Products. <a href="http://www.biotene.com">http://www.biotene.com</a> Available at most pharmacies: Walgreens.com



<b>BioXtra<sup>®</sup> Moisturing Gel<sup>5</sup> MouthSpray</b> <i>No prescription needed.</i> <i>Not available in the USA</i>	Aqua, sorbitol, maltitol, xylitol, hydroxymethylcellulose, colostrum extract, sodium monofluorophosphate, lactoperoxidase, lactoferrin & lysozyme	50 ml spray bottle. Lighthouse Health Products Inc., Ontario, Canada. <a href="http://www.bioxhealthcare.com/en/where_to_buy.php">http://www.bioxhealthcare.com/en/where_to_buy.php</a>
<b>BioXtra<sup>®</sup> Moisturizing Gel<sup>5</sup></b> <i>No prescription needed.</i> <i>Not available in the USA</i>	Xylitol, lactoferrin, lactoperoxidase system, lysozyme, colostrum extracts, aloe vera & calcium.	40 ml tube. Lighthouse Health Products Inc., Ontario, Canada. <a href="http://www.bioxhealthcare.com/en/where_to_buy.php">http://www.bioxhealthcare.com/en/where_to_buy.php</a>
<b>BioXtra<sup>®</sup> tablets<sup>5</sup></b> <i>No prescription needed.</i> <i>Not available in the USA</i>	Xylitol 95% , colostrum extract & lactoferrin	60 tablets. Flavor: mild mint-lemon. Lighthouse Health Products Inc., Ontario, Canada <a href="http://www.bioxhealthcare.com/en/where_to_buy.php">http://www.bioxhealthcare.com/en/where_to_buy.php</a>
<b>Caphosol<sup>®</sup></b> <i>By prescription only.</i>	Dibasic sodium phosphate 0.032, monobasic sodium phosphate 0.009, calcium chloride 0.052, sodium chloride 0.569, purified water qs ad (%w/w) <u>NOTE:</u> 71mg of sodium/30ml dose	<u>For xerostomia:</u> 2-10 x /day. No eating or drinking for at least 15 mins after use. Requires mixing; then swish the mouth & spit out. Repeat again.
<b>Carrots or celery</b> <i>No prescription needed.</i>		Chewing required. Recommended by the Oral Cancer Foundation
<b>Cherry or olive pit</b> <i>No prescription needed.</i>		Recommended at DryMouth.info
<b>Entertainer's Secret Throat Relief<sup>™</sup></b> <i>No prescription needed.</i>	Sodium carboxymethylcellulose, aloe vera gel, glycerin, dibasic sodium phosphate, potassium chloride, potassium sorbate	<u>Flavor:</u> honey-apple. 2 oz 60 ml spray bottle. KLI Corporation. <a href="http://www.entertainers-secret.com">http://www.entertainers-secret.com</a> Request local pharmacy order from wholesaler: AmeriSource Bergen #3870797; Cardinal Drug Co. #1165869; McKesson #1986728; H D Smith #211-6283
<b>Glandosane<sup>®</sup> Mouth Moisturizer</b> <i>No prescription needed.</i>	Sodium carboxy methylcellulose, sorbitol, sodium chloride, potassium chloride, calcium chloride dihydrate, magnesium chloride hexahydrate,	<u>Flavor:</u> mint. 15 ml spray bottle, pH 7.0. Kenwood Therapeutics/Bradley Laboratories. 973.882.1505

	dipotassium hydrogen phosphate, flavor, carbon dioxide	
<b>Halls Refresh™ candy</b> <i>No prescription needed.</i>	Isomalt, < 2% of: acesulfame potassium, beta carotene, blue 1, blue 2, natural & artificial flavoring, red 40, soy lecithin, sucralose	<u>Flavors:</u> Juicy strawberry, refreshing mint, tropical wave Kraft Foods. Available at all major mass merchandisers, grocery stores and drug stores
<b>MEDActive® Patient-Friendly™ Oral Relief Spray</b> <i>No prescription needed.</i>	Dimethicone, poloxamer 407, spilanthus extract (natural herb), water, xylitol, potassium sorbate, EDTA, sodium saccharin, sucra-lose, glycerin, xanthan gum, & flavor	Use throughout the day as needed. Non-aerosol pump spray. <u>Flavors:</u> lemonade, orange crème, ruby raspberry, natural spring, vanilla mint, butter-scotch. MedActive Oral Pharmaceuticals, LLC <a href="http://www.medactive.com/">http://www.medactive.com/</a>
<b>Moi-Stir® Oral spray</b> <i>No prescription needed.</i>	Water, sorbitol, glycerin, sodium carboxymethyl-cellulose, methylparaben, potassium chloride, dibasic sodium phosphate, propylparaben, calcium chloride, magnesium chloride, sodium chloride, & flavors	Spray 1 - 2 times into mouth. <u>Flavor:</u> Mild mint, pH 7.1 Analysis per 4 oz. spray bottle: sodium 6.47 mEq; potassium 1.93 mEq; magnesium 0.128 mEq. Kingswood Laboratories <a href="http://www.kingswood-labs.com/index.html">http://www.kingswood-labs.com/index.html</a>
<b>Mouth Kote® Dry Mouth Spray</b> <i>No prescription needed.</i>	Water, xylitol, sorbitol, yerba santa, citric acid, natural lemon-lime flavor, ascorbic acid, sodium benzoate, sodium saccharin	<u>Flavor:</u> Lemon-lime; 2 oz travel size, 8 oz pH 4.0 Parnell Pharmaceuticals. Available online at: CVS Pharmacy & Walgreens. <i>This product has been warned by FDA that it has not proven its claims.</i>
<b>Numoisyn® Liquid</b> <i>By prescription only</i>	Water, sorbitol, linseed (flaxseed) extract, chondrus crispus, methylparaben, sodium benzoate, potassium sorbate, dipotassium phosphate, propylparaben	Clear consistency similar to saliva. 30 ml/bottle or 300 ml/ bottle. Abdominal discomfort may be experienced with IBS or diverticular disease or use of a high linseed (flaxseed) diet.
<b>Numoisyn® Lozenges</b> <i>By prescription only</i>	Sorbitol, polyethylene glycol, malic acid, sodium citrate, calcium phosphate dibasic, hydrogenated cottonseed oil, citric acid, magnesium stearate & silicon dioxide	100 lozenges/bottle. Do not exceed 16 lozenges/24 hrs.

<p><b>Oasis® Moisturizing Mouthwash</b> <i>No prescription needed.</i></p>	<p>Water, glycerin, sorbitol, poloxamer 338, PEG-60 hydrogenated castor oil, carboxymethylcellulose, cetylpyridinium chloride, copovidone, disodium phosphate, flavors, methylparaben, propylparaben, sodium benzoate, sodium phosphate, sodium saccharin, xanthan gum, FD&amp;C blue #1</p>	<p>Use 1 oz of mouthwash for 30 seconds. Do not swallow. 16 fl. oz. bottle. <u>Flavors:</u> peppermint, spearmint GlaxoSmithKline (GSK) <a href="http://www.oasisdrymouth.com">http://www.oasisdrymouth.com</a> Available at most pharmacies: Walmart, CVS, RiteAid</p>
<p><b>Oasis® Moisturizing Mouth Spray</b> <i>No prescription needed.</i></p>	<p>Glycerin (vegetable source), cetylpyridinium chloride, copovidone, flavors, methylparaben, PEG-60 hydrogenated castor oil, propylparaben, sodium benzoate, sodium saccharin, water, xanthan gum, xylitol</p>	<p>Use PRN up to 30 times or 60 sprays/day. 1.0 fl. oz bottle (150 sprays/bottle). <u>Flavors:</u> peppermint, spearmint. GlaxoSmithKline (GSK) <a href="http://www.oasisdrymouth.com">http://www.oasisdrymouth.com</a> Available at most pharmacies, such as Walmart, CVS, RiteAid</p>
<p><b>Optimoist® spray</b> <i>No prescription needed.</i></p>	<p>Saliva substitute</p>	<p>2 oz spray bottle, pH 3.5. Colgate Oral Pharmaceuticals Canton, MA 800-226-5428</p>
<p><b>OraMoist™ Time-released Dry Mouth Disc</b> <i>No prescription needed.</i></p>	<p>Xylitol, polyvinyl pyrrolidone, carbomer homopolymer, triglycerides, lemon flavor, citric acid, calcium carbonate, hydroxypropyl cellulose, sodium chloride, silicone dioxide, magnesium stearate, glucose oxidase, lysozyme, lactoferrin, carmine</p>	<p>Time-released dry mouth treatment disc. Place disc on roof of mouth or inner cheek. Lasts up to 4 hrs. Limit: 3 discs/day. <u>Flavor:</u> natural fruit; 16 discs/box. Quantum Health. Available at CVS Pharmacy, RiteAid, Walgreens Store locator:<a href="http://www.oralmoist.com">www.oralmoist.com</a></p>
<p><b>Quench® Mist Mouth Spray</b> <i>No prescription needed.</i></p>	<p>De-ionized water, citric acid, benzoic acid, natural orange extract, FD&amp;C Yellow #6 or Red #40</p>	<p><u>Flavors:</u> cherry, lemon, grape and orange. Mueller Sports Medicine, Inc. <a href="http://www.quenchgum.com">http://www.quenchgum.com</a> Most sporting goods stores</p>
<p><b>Salivart® oral moisturizer spray</b> <i>No prescription needed.</i></p>	<p>Carboxymethyl cellulose, hydroxyethyl cellulose</p>	<p>Usually 1-2 sprays a day. 30 g or 70 g spray can preservative-free, pH 6.2-7.2. Gebauer Pharmaceuticals, Cleveland, OH 800-321-9348</p>

<p><b>SalivaSure® Tablets</b> <i>No prescription needed.</i></p>	<p>Xylitol, fruit acids, salts and a phosphate buffer</p>	<p><u>Flavor</u>: mild mint, 90 count bottle. Scandinavian Formulas, Inc. Dental Pharmacy 319.335.7435. CVS Pharmacy will order</p>
<p><b>Stoppers4® Dry Mouth Spray</b> <i>No prescription needed.</i></p>	<p>Water (aqua/deionized), glycerin, xylitol, hydroxyethylcellulose, lysozyme, lactoferrin, glucose oxidase, spearmint flavor (natural), sodium benzoate</p>	<p>4 fl oz bottle. <u>Flavor</u>: Mint. Woodridge Labs, Inc. <a href="http://www.woodridgelab.com">http://www.woodridgelab.com</a> Available at: Walgreens, CVS, Rite Aid</p>
<p><b>Sugar-free candies</b> <i>No prescription needed.</i></p>		<p>Available at all major mass merchandisers, grocery stores and drug stores</p>
<p><b>Sugar-free gum</b> <i>No prescription needed.</i></p>	<p>Biotene® or Xylifresh® (xylitol); Eclipse® (maltitol, sorbitol, mannitol, aspartame, acesulfame K); Extra® (sorbitol, mannitol, maltitol, acesulfame K and aspartame); Orbit® (sorbitol, mannitol, xylitol, aspartame, acesulfame K); Orbit® White (maltitol, sorbitol, mannitol, aspartame, acesulfame K); Orbit® Ice White (sorbitol, mannitol, maltitol syrup, aspartame, acesulfame K); Airwaves® (isomalt, sorbitol, mannitol, maltitol syrup (in Honey Lemon only), aspartame, acesulfame K); Trident® (sorbitol, mannitol, acesulfame, aspartame); Zapp! Gum (xylitol)</p>	<p><u>Zapp!® gum flavors</u>: fruit punch, apple, fresh fruit, apple cinnamon, cinnamon, peppermint. <a href="http://www.zappgum.com/categories/Xylitol-Chewing-Gum/">http://www.zappgum.com/categories/Xylitol-Chewing-Gum/</a> Available at all major mass merchandisers, grocery stores and drug stores.</p>
<p><b>Thayers® Dry Mouth Spray</b> <i>No prescription needed.</i></p>	<p>Purified water, vegetable glycerin, calcium gluconate, tris amino, citric acid, potassium chloride, natural peppermint flavor &amp; eucalyptus, or natural citrus flavor from oils of lemon &amp; lime.</p>	<p><b>Flavors</b>: citrus, peppermint. Henry Thayer &amp; Company <a href="http://www.thayers.com">http://www.thayers.com</a> Health food stores</p>
<p><b>Xero-Lube® Artificial Saliva spray</b> <i>No prescription needed.</i></p>	<p>Xylitol, carboxymethyl cellulose, hydroxyethyl cellulose</p>	<p>15 ml spray, sodium-free, pH 7.0. Colgate Oral Pharmaceuticals. Canton, MA 800-226-5428</p>

<b>Xylimelts®</b> <i>No prescription needed.</i>	Xylitol, cellulose gum, vegetable gum, mild natural peppermint flavor, calcium/magnesium stearate.	Dissolvable oral adhering discs; can be used while sleeping <a href="http://www.amazon.com/Orahealth-Xylimelts-Mints-80-Count-Boxes/dp/B001A40M1M">http://www.amazon.com/Orahealth-Xylimelts-Mints-80-Count-Boxes/dp/B001A40M1M</a>
<b>Thyme tea</b> <i>No prescription needed.</i>		Native American remedy. Pour hot water over a twig of thyme. Let the water cool to desired temp.
<p style="text-align: center;"><b>PREVENTION THERAPIES</b></p>	<p style="text-align: center;"><b>COMMENTS</b></p>	<p style="text-align: center;"><b>SIDE EFFECTS</b></p>
<b>Amifostine (Ethyol®)</b> <i>By prescription only</i>	Reduces damage to the salivary glands. By injection only, given prior to each radiation treatment session for head and neck cancer. Injection before radiation treatment.	<u>Side effects:</u> nausea/vomiting, hypotension, flushing, chills, malaise, fever, rash, dizziness, drowsiness, hiccups, and sneezing Anti-nausea medications may be prescribed. Adequate fluid intake. Blood pressure will be monitored Serum calcium levels may be monitored.
<b>Cevimeline (Evoxac®)</b> <i>By prescription only</i>	Capsule. To be effective, this medication needs the salivary glands to be <u>partially</u> working. Effective about 2-4 hours	<u>Side effects:</u> dry eyes, blurry vision, nasal congestion, muscle pain, vaginal itching/ discharge, constipation, poor appetite, diarrhea, chest tightness, shortness of breath, eye pain, fever, mouth sores and eye drainage
<b>Pilocarpine HCl Salagen® tablet</b> <i>By prescription only</i>	5 mgs taken 3-4 x/day with 8 oz water. About 1 ½ hrs to work, and effective for 2-3 hrs. To be effective, needs the salivary glands to be partially working	<u>Side effects:</u> arthralgia, chills, cough, diarrhea, fever, flushing, indigestion, myalgia, nausea, polyuria, runny nose, sweating, or unusual tiredness or weakness

## References

1. Hahnel S, Behr M, Handel G, Bürgers R. Saliva substitutes for the treatment of radiation-induced xerostomia--a review. *Support Care Cancer*. 2009 Nov;17(11):1331-43
2. Cho JH, Chung WK, Kang W, Choi SM, Cho CK, Son CG. Manual acupuncture improved quality of life in cancer patients with radiation-induced xerostomia. *J Altern Complement Med*. 2008 Jun;14(5):523-6.
3. O'Sullivan EM, Higginson IJ. Clinical effectiveness and safety of acupuncture in the treatment of irradiation-induced xerostomia in patients with head and neck cancer: a systematic review. *Acupunct Med* 2010;28:191-199.
4. Lu W, Rosenthal DS. Recent advances in oncology acupuncture and safety considerations in practice. *Curr Treat Options Oncol*. 2010 Dec;11(3-4):141-6.
5. Dirix P, Nuyts S, Vander Poorten V, Delaere P, Van den Bogaert W. Efficacy of the BioXtra dry mouth care system in the treatment of radiotherapy-induced xerostomia. *Support Care Cancer*. 2007 Dec;15(12):1429-36.
5. Koukourakis, M. I. "Amifostine in Clinical Oncology: Current Use and Future Applications." *Anticancer Drugs* 13 (March 2002): 181–209.
6. Leek, H., and M. Albertsson. "Pilocarpine Treatment of Xerostomia in Head and Neck Patients." *Micron* 33 (2002): 153–155.
7. Jensen SB, Pedersen AM, Vissink A, Andersen E, Brown CG, Davies AN, Dutilh J, Fulton JS, Jankovic L, Lopes NN, Mello AL, Muniz LV, Murdoch-Kinch CA, Nair RG, Napeñas JJ, Nogueira-Rodrigues A, Saunders D, Stirling B, von Bültzingslöwen I, Weikel DS, Elting LS, Spijkervet FK, Brennan MT; Salivary Gland Hypofunction/Xerostomia Section; Oral Care Study Group; Multinational Association of Supportive Care in Cancer (MASCC)/International Society of Oral Oncology (ISOO). A systematic review of salivary gland hypofunction and xerostomia induced by cancer therapies: management strategies and economic impact. *Support Care Cancer*. 2010 Aug;18(8):1061-79.

## INDEX OF BIOTHERAPY AND CHEMOTHERAPY DRUGS

Abraxane<sup>(R)</sup> (see *paclitaxel*)

### **actinomycin-D**

**Adriamycin<sup>(R)</sup>** (see *doxorubicin*)

Afinitor<sup>(R)</sup> (see *everolimus*)

Alimta<sup>(R)</sup> (see *pemetrexed*)

Alkaban-AQ<sup>(R)</sup> (see *vinblastine*)

Alkeran<sup>(R)</sup> (see *melphalan*)

### **altretame**

### **anastrozole**

ARA-C (see *cytarabine*)

Aromasin<sup>(R)</sup> (see *exemestane*)

Arimidex<sup>(R)</sup> (see *anastrozole*)

### **asparaginase**

Avastin<sup>(R)</sup> (see *bevacizumab*)

### **azactidine**

BCNU (see *carmustine*)

### **bevacizumab**

### **bicalutamide**

BiCNU<sup>(R)</sup> (see *carmustine*)

### **bleomycin**

blenoxane<sup>(R)</sup> (see *bleomycin*)

### **bortezomib**

### **busulfan**

Busulfex<sup>(R)</sup> (see *busulfan*)

Camptosar<sup>(R)</sup> (see *irinotecan*)

### **capecitabine**

### **carboplatin**

### **carmustine**

Casodex<sup>(R)</sup> (see *bicalutamide*)

CCNU (see *lomustine*)

CeeNu<sup>(R)</sup> (see *lomustine*)

Cerubidine<sup>(R)</sup> (see *daunorubicin*)

### **cetuximab**

CDDP (see *cisplatin*)

### **chlorambucil**

### **cladribine**

### **cisplatin**

Cosmegen<sup>(R)</sup> (see *actinomycin-D*)

CTX (see *cyclophosphamide*)

### **cyclophosphamide**

### **cytarabine**

Cytosar-U<sup>(R)</sup> (see *cytarabine*)

Cytosan<sup>(R)</sup> (see *cyclophosphamide*)

DAC (see *decitabine*)

### **dacarbazine**

Dacogen<sup>(R)</sup> (see *decitabine*)

dactinomycin (see *actinomycin-D*)

### **dasatinib**

Daunomycin<sup>(R)</sup> (see *daunorubicin*)

### **daunorubicin**

Decadron<sup>(R)</sup> (see *dexamethasone*)

### **decitabine**

### **degarelix**

### **dexamethasone**

### **docetaxel**

Doxil<sup>(R)</sup> (see *doxorubicin*)

### **doxorubicin**

Droxia<sup>TM</sup> (see *hydroxyurea*)

DTIC (see *dacarbazine*)

DTIC-Dome<sup>(R)</sup> (see *dacarbazine*)

Ellence<sup>(R)</sup> (see *epirubicin*)

Eloxatin<sup>(R)</sup> (see *oxaliplatin*)

Epi (see *epirubicin*)

### **epirubicin**

EPO (see *epoetin alfa*)

### **epoetin alfa**

Eritux<sup>(R)</sup> (see *cetuximab*)

### **erlotinib**

### **etoposide**

### **everolimus**

### **exemestane**

Fareston<sup>(R)</sup> (see *toremifene*)

Faslodex<sup>(R)</sup> (see *fulvestrant*)

Femara<sup>(R)</sup> (see *letrozole*)

firmagon<sup>(R)</sup> (see *degarelix*)

5-FU (see *fluorouracil*)

Fludara<sup>(R)</sup> (see *fludarabine*)

### **fludarabine**

### **fluorouracil**

### **filgrastim**

folinic acid (see *leucovorin*)

### **fulvestrant**

G-CSF (see *filgrastim*)

### **gefitinib**

### **gemcitabine**

Gemzar<sup>(R)</sup> (see *gemcitabine*)

Gleevec<sup>(R)</sup> (see *imatinib mesylate*)

Herceptin<sup>(R)</sup> (see *trastuzumab*)

Hexadrol<sup>(R)</sup> (see *dexamethasone*)

Hexalen<sup>(R)</sup> (see *Altretame*)

Hycamtin<sup>(R)</sup> (see *topotecan*)

Hydrea<sup>(R)</sup> (see *hydroxyurea*)

### **hydroxyurea**

Idamycin<sup>(R)</sup> (see *idarubicin*)

### **idarubicin**

Ifex<sup>(R)</sup> (see *ifosfamide*)

**ifosfamide**  
**imatinib mesylate**  
Iressa<sup>(R)</sup> (see *gefitinib*)  
**irinotecan**  
**ixabepilone**  
Ixempra<sup>(R)</sup> (see *ixabepilone*)  
**lapatinib**  
L-asparaginase (see *asparaginase*)  
**letrozole**  
**leucovorin**  
**leuprolide**  
Leustatin<sup>(R)</sup> (see *cladribine*)  
Lisodren<sup>(R)</sup> (see *mitotane*)  
**lomustine**  
Lukeran<sup>(R)</sup> (see *chlorambucil*)  
Lupron<sup>(R)</sup> (see *leuprolide*)  
**mechlorethamine**  
**melphalan**  
**methotrexate**  
**mitomycin C**  
**mitotane**  
**mitoxantrone**  
MTC (see *mitomycin C*)  
**MTX** (see *methotrexate*)  
Mustargen<sup>(R)</sup> (see *mechlorethamine*)  
Mutamycin<sup>(R)</sup> (see *mitomycin C*)  
Myleran<sup>(R)</sup> (see *busulfan*)  
Mylocel<sup>(R)</sup> (see *hydroxyurea*)  
Mylosar (see *azacitidine*)  
Navelbine<sup>(R)</sup> (see *vinorelbine*)  
Neosar<sup>(R)</sup> (see *cyclophosphamide*)  
Neupogen<sup>(R)</sup> (see *filgrastim*)  
Nexavar<sup>(R)</sup> (see *sorafenib*)  
**nilotinib**  
Nipent<sup>(R)</sup> (see *pentostatin*)  
Nolvadex<sup>(R)</sup> (see *tamoxifen*)  
Novantrone<sup>(R)</sup> (see *mitoxantrone*)  
Oncaspar<sup>(R)</sup> (see *pegasparagase*)  
Oncovin<sup>(R)</sup> (see *vincristine*)  
**oxaliplatin**  
**paclitaxel**  
**panitumumab**  
Paraplatin<sup>(R)</sup> (see *carboplatin*)  
**pazopanib**  
PEG-ASP (see *pegasparagase*)  
**pegasparagase**  
**PEG interferon**  
PEG-Intron<sup>(R)</sup> (see *PEG interferon*)  
**pemetrexed**  
**pentostatin**  
Platinol<sup>(R)</sup> AQ (see *cisplatin*)

Procrit<sup>(R)</sup> (see *epoetin alfa*)  
**rituximab**  
Rituxan<sup>(R)</sup> (see *rituximab*)  
**sorafenib**  
**streptozotocin**  
Sprycel<sup>(R)</sup> (see *dasatinib*)  
Stutent<sup>(R)</sup> (see *sunitinib*)  
**sunitinib**  
**tamoxifen**  
Tarceva<sup>(R)</sup> (see *erlotinib*)  
Tasigna<sup>(R)</sup> (see *nilotinib*)  
Taxol<sup>(R)</sup> (see *paclitaxel*)  
Taxotere<sup>(R)</sup> (see *docetaxel*)  
Temodar<sup>(R)</sup> (see *temozolomide*)  
**temozolomide**  
**temsirolimus**  
**teniposide**  
**thioquanine**  
Thioplex<sup>(R)</sup> (see *thiotepa*)  
**thiotepa**  
**topotecan**  
Toposar<sup>(R)</sup> (see *etoposide*)  
TOR (see *toremifene*)  
**toremifene**  
ToriceL<sup>(R)</sup> (see *temsirolimus*)  
**trastuzumab**  
Tykerb<sup>(R)</sup> (see *lapatinib*)  
**valrubicin**  
Valstar<sup>(R)</sup> (see *valrubicin*)  
Vectibix<sup>(R)</sup> (see *panitumumab*)  
Velban<sup>(R)</sup> (see *vinblastine*)  
Velcade<sup>(R)</sup> (see *bortezomib*)  
VePesid<sup>(R)</sup> (see *etoposide*)  
Viadaza<sup>(R)</sup> (see *azacitidine*)  
**vinblastine**  
**vincristine**  
**vinorelbine**  
**vorinostat**  
Votrient<sup>(R)</sup> (see *pazopanib*)  
VP-16 (see *etoposide*)  
Vumon<sup>(R)</sup> (see *teniposide*)  
Zanosar<sup>(R)</sup> (see *streptozotocin*)  
Xeloda<sup>(R)</sup> (see *capecitabine*)  
Zolinza<sup>(R)</sup> (see *vorinostat*)  
Zortress<sup>(R)</sup> (see *everolimus*)



## Other Medications Frequently Used with Chemotherapy

<p><b>dexamethasone</b> Tablet, infusion into a vein</p> <p><u>U. S. brand names</u> Decadron® Dexasone Diodex Hexadrol Maxidex</p>	<p><b>Note:</b> This corticosteroid has many uses, including treating nausea &amp; vomiting associated with some chemotherapy drugs, and to reduce inflammation. <u>Do not suddenly stop this medication</u>, unless instructed by the healthcare provider. It may cause appetite loss, stomach upset, vomiting and/or weight loss In general, drink at least 2-3 quarts of fluid every 24 hours. <u>Fluid retention, weight gain, increased appetite.</u> <u>Heartburn/nausea/vomiting:</u> Take this medication with <u>food</u> to reduce stomach upset. <u>Limit caffeine.</u> If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset. <u>Increases blood sugar levels.</u> If diabetic, closely monitor blood sugar levels daily. <u>Sore throat</u></p>
<p><b>epoetin alfa</b> Injection under skin, into arm, abdomen or thigh</p> <p><u>U.S. brand names</u> Eprex® Procrit®</p>	<p>This medication is used to increase red blood cell production in the treatment of fatigue and anemia. <u>Diarrhea:</u> Use prescribed medication for diarrhea, if needed &amp; drink more fluids. <u>Fluid retention</u> <u>Vomiting:</u> Use prescribed medication for nausea to prevent on-set of nausea. If using medications for pain control, take it on a full stomach to reduce stomach upset.</p>
<p><b>filgrastim</b> Injection under the skin or infusion into a vein</p> <p><u>Other names:</u> G-CSF Granulocyte colony stimulating factor</p> <p><u>US. brand name</u> Neupogen®</p>	<p><b>Note:</b> This is a supportive medication is used to stimulate production of white blood cells.</p> <p><u>Nausea (MILD):</u> Use prescribed medications for nausea to <u>prevent</u> on-set of nausea. If using medications for pain control, take it on a <u>full</u> stomach to reduce stomach upset.</p>
<p><b>leucovorin</b> Tablets, injection or infusion into a vein</p> <p><u>Other names:</u> Calcium leucovorin Citrovorum factor Folinic acid 5-formyl tetrahydrofolate</p>	<p><b>Note:</b> When given with fluorouracil (5FU), it may INCREASE the side effects of 5FU. When given in combination with methotrexate, is LESSENS the side effects of methotrexate.</p> <p>In general, drink at least 2-3 quarts of fluid every 24 hours.</p> <p><u>Nausea/vomiting (RARE):</u> Use prescribed medication for nausea to prevent on-set of nausea. If using medications for pain control, take it on a full stomach to reduce stomach upset.</p>

### References:

1. NCI Drug Dictionary. Accessed: 10/2010 Available at: <http://www.cancer.gov/drugdictionary>
2. Chemocare.com Accessed: 10/2010. Content by Cleveland Clinic Cancer Center. Available at: <http://www.chemocare.com/bio>
3. Food Medication Interactions, 16th edition. Zaneta M. Pronsky, MS, RD, LDN, FADA and Sr. Jeanne P. Crowe, Pharm D. RPH.
4. Chemotherapy and Biotherapy Guidelines and Recommendations for Practice. 2nd edition. Martha Polovich, Julie M White, Linda O Kelleher. (eds) ONS Publishing.
5. AHFS® Consumer Medication Information. 2010. Accessed at: <http://www.ncbi.nlm.nih.gov/pubmedhealth>
6. Drug Information by MicroMedex . Accessed at <http://www.mayoclinic.com>

## Pain Medications

The World Health Organization's 3-step plan for managing pain is based on the pain severity. The individual's response is used to determine the effective dose for aspirin, acetaminophen, and other non-steroidal anti-inflammatory drugs (NSAIDs). When pain relief is not achieved with the maximum dosage of one NSAID, other medications within the same step is trialed before stopping NSAIDs therapy.

NOTE: Most individuals experiencing cancer-related pain will need a Step 2 or Step 3 medication. Step 1 medications may be skipped if the initial pain is rated "moderate" to "severe".<sup>1</sup>

### STEP 1. Analgesics (For MILD pain)

GENERIC/BRAND NAME	INDICATION/ DOSAGE/FORM	COMMENTS
<p><u>acetaminophen</u> (APAP) <i>(Non-Prescription)</i></p> <p>Acephen<sup>®</sup> Actamin<sup>®</sup> Backaid<sup>®</sup> Max Str Back Relief Excedrin<sup>®</sup> Feverall<sup>®</sup> Genapap<sup>™</sup> Inholtra<sup>®</sup> Caplets with acetaminophen Mapap<sup>®</sup> Percogesic<sup>®</sup> Q-Pa<sup>®</sup> Tactinal<sup>®</sup> Tempra<sup>®</sup> 1 Tylenol<sup>®</sup> Tylenol<sup>®</sup> Extra Strength Uniserts<sup>®</sup> Vitapap<sup>®</sup> Walgreens<sup>®</sup> Arthritis Pain Relief</p>	<p><u>Analgesic</u> <i>(Used with headaches, muscle aches, menstrual periods, colds &amp; sore throats, toothaches, back-aches, osteoarthritis, vaccination reactions &amp; fever)<sup>2,32</sup></i></p> <p>-Tablet -Tablet, chewable -Tablet, disintegrating -Effervescent granules -Oral liquid (elixir) -Oral drops -Suspension -Gel syrup -Suppository (rectal)</p> <p><u>Adults:</u> q 4- 6 hrs or q 6- 8 hrs <sup>2</sup> (oral or rectal)</p> <p><u>*Maximum:</u> &lt; 1 gram/dose or 1000 mg/dose or 4 grams/day or 4000 mg/day <sup>2</sup></p>	<p>Less effective than aspirin for soft tissue pain.<sup>1,5</sup> For "moderate" to "severe" pain when used with an adjunctive opioid <sup>5</sup></p> <p><u>Nutrition-related side effects:</u> None (small doses) <u>MAJOR Interactions:</u> Alcoholic beverages, chaparral, comfrey <sup>2,31,32</sup></p> <p><u>Special Alerts:</u> -Urinary glucose results with test strips (Chemstrips), falsely lowered <sup>2,3,41</sup> and some glucometers <sup>41</sup>; urinary 5-HIAA, false positive <sup>2,42</sup> -Phenylketonuria (PKU): Chewable tablet may contain aspartame, a source of phenylalanine <sup>32</sup> -Hepatotoxicity risk: &gt; maximum daily dose; chronic alcoholics &gt; 2000 mg/day or 2 grams /day <sup>41</sup></p> <p><i>*The U.S. Food &amp; Drug Administration is currently investigating the maximum dose. <sup>39</sup></i></p>

<p><u>acetaminophen</u> (Prescription) Ofirmev™</p>	<p><u>Analgesic formulation</u> (Used with mild to moderate pain &amp; fever) <sup>2</sup> -Solution, injection administered in hospital setting <sup>5</sup></p>	<p>For "moderate" to "severe" pain when used with an adjunctive opioid <sup>5</sup> <u>Nutrition-related side effects:</u> Constipation, nausea, vomiting <sup>5</sup> <u>MAJOR Interactions:</u> Alcoholic beverages, chaparral, comfrey <sup>31</sup> <u>Special Alerts:</u> -Urinary glucose results with test strips (Chemstrips), falsely lowered <sup>2,3,41</sup> and some glucometers <sup>41</sup> - Urinary 5-HIAA, false positive <sup>2,42</sup></p>
<p><u>acetaminophen, butalbital + caffeine</u> (Prescription) Alagesic® Anolor® 300 Dolgic LQ® Dolgic Plus® Esgic® Esgic-Plus® Fioricet® Geone® Margesic® Medigesic® Repan® Zebutal®</p>	<p><u>Combination formulation</u> (Used with tension headaches) <sup>2</sup> -Capsules -Liquid Adults: q 4 hrs <u>Maximum Daily Dose</u> Fioricet® not &gt; 6 tablets/day Zebutal® not &gt; 6 capsules/day</p>	<p><u>Nutrition-related side effects:</u> Anorexia, nausea, stomach pain <sup>2</sup> <u>To reduce stomach upset:</u> Take with 8 oz milk or after a meal. Avoid caffeine. <sup>2</sup> <u>MAJOR Interactions:</u> Alcoholic beverages, chaparral, comfrey <sup>31</sup> <u>Special Alerts:</u> -Urinary glucose results with test strips (Chemstrips), falsely lowered <sup>2,3,41</sup> and some glucometers <sup>41</sup> -Urinary 5-HIAA, false positive <sup>2,42</sup></p>
<p><u>acetaminophen, isometheptene + dichloralphenazone</u> (Prescription) Duradrin® Epidrin® Isocom® Midrin® Migquin® Migrapap® Migratine® Migrazone®</p>	<p><u>Combination formulation</u> (Used with severe tension, or migraine headaches) <sup>2</sup> -Tablets <u>*Maximum Acetaminophen:</u> 1 gram/dose or 1000 mg/dose, or 4 grams/day or 4000 mg/day</p>	<p><u>Nutrition-related side effects:</u> None <u>MAJOR Interactions:</u> Alcoholic beverages, chaparral, comfrey <sup>31</sup> <u>Special Alerts:</u> -Urinary glucose results with test strips (Chemstrips), falsely lowered <sup>2,3,41</sup> and some glucometers <sup>41</sup> -Urinary 5-HIAA, false positive <sup>2,42</sup>  (*The U.S. Food &amp; Drug Administration is currently investigating the maximum dose.) <sup>39</sup></p>

<p>aspirin<sup>5</sup> (Non-prescription)</p> <p>Anacin<sup>®</sup> Arthritis Pain<sup>®</sup> Aspergum<sup>®</sup> Aspir-Low<sup>®</sup> Aspirin Lite Coat<sup>®</sup> Bayer Aspirin<sup>®</sup> Bufferin<sup>®</sup> Easprin<sup>®</sup> Ecotrin<sup>®</sup> Empirin<sup>®</sup> Fasprin<sup>®</sup> Genacote<sup>®</sup> Genprin<sup>®</sup> Halfprin<sup>®</sup> Norwich Aspirin<sup>®</sup> St. Joseph's Aspirin<sup>®</sup> Stanback Analgesic<sup>®</sup> Tri-Buffered Aspirin<sup>®</sup> YSP Aspirin<sup>®</sup> Zorprin<sup>®</sup></p>	<p><u>Non-steroidal anti-inflammatory formulations</u> (Used with pain, inflammation, neuropathic &amp; arthropathic pain)<sup>36</sup></p> <p>-Tablet -Tablet, chewable -Tablet, delayed-release -Tablet, enteric-coated -Tablet, orally disintegrating -Capsule, extended-release -Chewing gum -Suppository (rectal use)</p> <p><u>Children &amp; adults:</u> q 4-6 hrs</p>	<p>For "moderate" to "severe" pain when used with an adjunctive opioid<sup>5</sup>.</p> <p><u>Nutrition-related side effects:</u> Dyspepsia, nausea, vomiting</p> <p><u>To reduce stomach upset:</u> Take with 8 oz of milk or after a meal.<sup>3,41</sup></p> <p><u>MAJOR Interactions:</u> Alcoholic beverages, danshen, dong quai, evening primrose oil, garlic, ginger, ginkgo, ginseng, horse chestnut, policosanol, willow bark<sup>31,41</sup></p> <p><u>Special Alerts:</u></p> <ul style="list-style-type: none"> <li>-5-HIAA<sup>42</sup></li> <li>- Serum amylase<sup>42</sup></li> <li>- PTT<sup>42</sup></li> <li>- VMA<sup>42</sup></li> <li>-Diabetes, closely monitor.<sup>41,42</sup></li> <li>-Hepatotoxicity<sup>41</sup></li> <li>-Tartrazine sensitivity<sup>41</sup></li> <li>- Reyes syndrome (children)<sup>41</sup></li> </ul> <p>Do not use product with a strong, vinegar odor.</p>
<p><u>capsaicin</u> (Prescription)</p> <p>Qutenza<sup>®</sup> patch<sup>2</sup></p>	<p><u>Local topical analgesic formulations</u> (Used with postherpetic neuralgia)<sup>2,5</sup></p> <p>-Patch-effective for 12 weeks</p>	<p>Qutenza<sup>®</sup> patch is applied by healthcare professional for 60 minutes. Repeated q 3 months or PRN, but not &lt; 3 months</p> <p><u>Nutrition-related side effects:</u> Nausea, vomiting, weight changes.</p>
<p>celecoxib<sup>5</sup> (Prescription)</p> <p>Celebrex<sup>®</sup></p>	<p><u>Non-steroidal anti-inflammatory formulation</u> (Used with osteoarthritis, rheumatoid arthritis, ankylosing spondylitis &amp; painful menstrual periods)<sup>2</sup></p> <p>-Capsules, 1-2 x/day</p>	<p><u>Nutrition-related side effects:</u> constipation, diarrhea, dysgeusia, dyspepsia, flatulence, nausea, pharyngitis, stomach pain<sup>2,41</sup></p> <p><u>To prevent constipation:</u> Drink 6 - 8 full glasses of water/day. Increase dietary fiber.<sup>2</sup></p> <p><u>To reduce stomach upset:</u> Take with food or 8 oz milk.<sup>41</sup></p> <p>Limit caffeine.<sup>3,41</sup> However, may cause severe GI bleed, perforation without warning<sup>2,41</sup></p> <p><u>MAJOR Interaction:</u> St. John's wort<sup>31</sup></p> <p><u>Special Alerts:</u> Sulfa sensitivity<sup>5</sup></p>

<p><u>choline &amp; magnesium trisalicylate</u> <sup>5</sup> (Prescription)</p> <p>Choline Magnesium Trisalicylate® Trilisate® Tricosal®</p>	<p><u>Non-steroidal anti-inflammatory formulations</u> (Used with arthritis &amp; shoulder pain) <sup>32</sup></p> <p>-Tablet, q 6–8 hrs -Oral solution, q 6–8 hrs</p>	<p><u>Nutrition-related side effects:</u> constipation, diarrhea, dyspepsia, nausea, stomach pain, vomiting <u>To reduce stomach upset:</u> Take with a meal or with milk. <u>To prevent constipation:</u> Drink 6 - 8 full glasses of water/day. Increase dietary fiber. <sup>2</sup> <u>MAJOR Interactions:</u> Alcoholic beverages, chaparral, comfrey <sup>31</sup> <u>Special Alerts:</u> Diabetes, closely monitor <sup>32</sup></p>
<p><u>diflunisal</u> <sup>5</sup> (Prescription)</p> <p>Dolobid®</p>	<p><u>Non-steroidal anti-inflammatory formulation</u> (Used with osteoarthritis) <sup>32</sup></p> <p>-Tablets: q 8-12 hrs <sup>8</sup></p>	<p><u>Nutrition-related side effects:</u> constipation, diarrhea, flatulence, nausea, vomiting <sup>32</sup> <u>To prevent constipation:</u> Drink 6 - 8 full glasses of water/day. Increase dietary fiber. <sup>2</sup> <u>To reduce stomach upset:</u> Take with a milk, or food. <sup>32</sup> <u>MAJOR Interaction:</u> St John's wort. <sup>31</sup></p>
<p><u>etodolac</u> <sup>5</sup> (Prescription)</p> <p>Lodine® Lodine XL®</p>	<p><u>Non-steroidal anti-inflammatory formulation</u> (Used with osteoarthritis and rheumatoid arthritis)</p> <p>-Tablets, q 6–8 hrs -Tablet, extended-release, q 6–8 hrs</p>	<p><u>Nutrition-related side effects:</u> constipation, diarrhea, flatulence, nausea, pharyngitis, vomiting <sup>32</sup> <u>To prevent constipation:</u> Drink 6 - 8 full glasses of water/day. Increase dietary fiber. <sup>2</sup> <u>To reduce stomach upset:</u> Take with a meal or with milk. Limit caffeine. <sup>3,41</sup> <u>MAJOR Interaction:</u> St John's wort <sup>31</sup></p>
<p><u>fenoprofen calcium</u> (Prescription)</p> <p>Nalfon® Nalfon® 200</p>	<p><u>Non-steroidal anti-inflammatory formulation</u> (Used with osteoarthritis, rheumatoid arthritis, gouty arthritis &amp; ankylosing spondylitis) <sup>32</sup></p> <p>-Capsule, 4- 6 hrs <u>Maximum:</u> 3 grams/day or 3000 mg/day</p>	<p><u>Nutrition-related side effects:</u> bloating, constipation, dyspepsia, stomach pain, rapid weight gain <sup>2</sup> <u>To prevent constipation:</u> Drink 6 - 8 full glasses of water/day. Increase dietary fiber. <sup>2</sup> <u>To reduce stomach upset:</u> Take with meals or with milk. <sup>32</sup> <u>Interactions:</u> Beta glucan, ginkgo <sup>2</sup> <u>Special Alerts:</u> Diabetes, closely monitor <sup>2</sup></p>

<p>ibuprofen<sup>5</sup> (Non-prescription)</p> <p>Advil® Advil® Liqui-Gels Genpril® Ibu® Midol® Motrin® Nuprin®</p>	<p><u>Non-steroidal anti-inflammatory inflammation</u> (Used with fever pain or inflammation from headache, toothache, back pain, arthritis, menstrual cramps, or minor injury)<sup>2</sup></p> <p>-Tablets -Chewable tablet -Oral liquid suspension 6 mo -11 yrs: q 6-8 hrs<sup>10</sup> Adults: q 4- 6 hrs <u>Maximum Daily Dose</u> 6 mo -11 yrs: 40 mg/kg/day Adults: 800 mg/dose or 3200 mg/day</p>	<p>For "moderate" to "severe" pain when used with an adjunctive opioid<sup>5</sup></p> <p><u>Nutrition-related side effects:</u> dyspepsia, nausea, stomach pain, vomiting <u>To prevent stomach upset:</u> Take with food or 8 oz of milk. Limit caffeine.<sup>3,41</sup> <u>To prevent throat irritation:</u> Do not recline for 30 minutes.<sup>2</sup> <u>MAJOR Interactions:</u> danshen, dong quai, evening primrose oil, ginkgo, policosanol, St. John's wort, willow bark<sup>31</sup></p>
<p>ibuprofen<sup>5</sup> (Prescription)</p> <p>Caldolor™</p>	<p><u>Non-steroidal anti-inflammatory formulation</u> (Used with mild to moderate pain, and available for hospital use only)<sup>2</sup></p> <p>-Solution, parenteral: I.V. or I.M., infusion time not &lt;30 minutes administered in hospital setting <u>Adults:</u> q 6 hrs</p>	<p>For "moderate" to "severe" pain when used with an adjunctive opioid<sup>5</sup></p> <p>Must be well-hydrated before administration <u>Nutrition-related side effects:</u> flatulence, nausea, vomiting<sup>7</sup> <u>MAJOR Interactions:</u> danshen, dong quai, evening primrose oil, ginkgo, policosanol, St John's wort, willow bark.<sup>31</sup></p>
<p>ketoprofen<sup>5</sup> (Prescription)</p> <p>Acton® Orudis® Orudis®KT Oruvail®</p>	<p><u>Non-steroidal anti-inflammatory formulation</u> (Used with arthritis: gouty, juvenile, osteo &amp; rheumatoid types; menstrual pain, ankylosing spondylitis, Reiter's syndrome, bursitis, tendinitis)</p> <p>-Capsule, immediate-release q 6- 8 hrs -Capsule, extended-release q 6- 8 hrs <u>Maximum:</u> 75 mg/day</p>	<p>Stronger, longer lasting &amp; easier on the stomach compared to aspirin.<sup>5</sup></p> <p><u>Nutrition-related side effects:</u> anorexia, constipation, diarrhea, dyspepsia, flatulence, stomatitis<sup>2,32</sup> <u>To prevent constipation:</u> Drink 6 - 8 full glasses of water/day. Increase dietary fiber.<sup>2</sup> <u>MAJOR Interaction:</u> Beta glucans, ginkgo, St John's wort<sup>2,31</sup> <u>Special Alerts:</u> Diabetic oral meds, closely monitor<sup>2</sup></p>
<p>ketorolac<sup>5</sup> (Prescription)</p> <p>Toradol®</p>	<p><u>Non-steroidal anti-inflammatory formulations</u> (Used with moderately severe pain, usually after surgery)<sup>32</sup></p> <p>-Solution, parenteral, I.V. or I.M. in hospital<sup>5</sup> -Tablet q 4-6 hrs <u>Maximum:</u> 40 mg/day or total (tablets + I.V.) not &gt; 5 days</p>	<p>Used ≤ 5 days duration<sup>5</sup></p> <p><u>Nutrition-related side effects:</u> constipation, diarrhea, dyspepsia, flatulence, stomatitis<sup>32</sup> <u>Moderate Interactions:</u> Alcoholic beverages<sup>31</sup></p>

<p><u>magnesium salicylate</u> <sup>5</sup> (Non-prescription)</p> <p>Doan's pills<sup>®</sup> Magan<sup>®</sup> Mobidin<sup>®</sup> MST<sup>®</sup> Nuprin Backache Caplet<sup>®</sup></p>	<p><u>Non-steroidal anti-inflammatory formulation</u> (Used with arthritis) -Tablets, q 4 hrs</p>	<p><u>Nutrition-related side effects:</u> dyspepsia, nausea, stomach pain, xerostomia <sup>2</sup> <u>To reduce stomach upset:</u> Take with 8 oz milk or after a meal <sup>2</sup> <sup>2</sup> Do not recline for 30 minutes <sup>2</sup> <u>MAJOR Interactions:</u> alcoholic beverages, danshen, dong quai, evening primrose oil, ginkgo, policosanol, willow bark. <sup>2,31</sup> <u>Special Alerts:</u> Diabetic, oral meds, closely monitor <sup>2</sup></p>
<p><u>meclofenamate sodium</u> (Prescription)</p> <p>Meclomen<sup>®</sup></p>	<p><u>Non-steroidal anti-inflammatory formulation</u> (Used with osteoarthritis, rheumatoid arthritis, menstrual pain, heavy menstrual flow, ankylosing spondylitis &amp; psoriatic arthritis) <sup>32</sup> -Capsules, 3 - 4 doses/day <u>Maximum:</u>400 milligrams (mg)/day</p>	<p><u>Nutrition-related side effects:</u> constipation, diarrhea, dyspepsia, flatulence, stomatitis, stomach pain <sup>32</sup> <u>To reduce stomach upset:</u> Take with a meal or with milk. <sup>32</sup> <u>Moderate Interactions:</u> Alcoholic beverages <sup>31</sup></p>
<p><u>mefenamic acid</u> (Prescription)</p> <p>Ponstel<sup>®</sup> Apo-Mefenamic (Canada)</p>	<p><u>Non-steroidal anti-inflammatory formulation</u> (Used with menstrual pain) <sup>32</sup> Used not &gt; 7 days <sup>5</sup> -Capsules, q 6 hrs</p>	<p><u>Nutrition-related side effects:</u> bloating, constipation, diarrhea, flatulence <u>To prevent constipation:</u> Drink 6 - 8 full glasses of water/day. Increase dietary fiber. <sup>2</sup> <u>To reduce stomach upset:</u> Take with a meal or with milk. <u>MAJOR Interaction:</u> St John's wort, thuja <sup>31</sup></p>
<p><u>meloxicam</u> (Non-prescription)</p> <p>Mobic<sup>®</sup></p>	<p><u>Non-steroidal anti-inflammatory formulations</u> (Used with osteoarthritis, rheumatoid arthritis, juvenile rheumatoid arthritis &amp; ankylosing spondylitis ) <sup>32</sup> -Tablets -Oral suspension <u>Maximum:</u> 15 mg/day</p>	<p><u>Nutrition-related side effects:</u> constipation, diarrhea, dyspepsia, flatulence, nausea, pharyngitis <sup>32</sup> <u>To prevent constipation:</u> Drink 6 - 8 full glasses of water/day. Increase dietary fiber. <sup>2</sup> <u>To reduce stomach upset:</u> Take with a meal or with milk. Avoid caffeine. <sup>3,41</sup> <u>MAJOR Interaction:</u> St John's wort <sup>31</sup></p>

<p><u>naproxen</u> <i>(Non-prescription)</i></p> <p>Aleve<sup>®</sup> Comfort Pac with Naproxen<sup>®</sup> Leader Naproxen Sodium<sup>®</sup> Midol<sup>®</sup> Extended Relief Naprelan<sup>®</sup></p>	<p><u>Non-steroidal anti-inflammatory formulation</u> <i>(Used with fever, headaches, muscle aches, arthritis, gout, menstrual periods, common cold, toothache, backache &amp; Paget's disease)</i><sup>2</sup></p> <p>-Tablet: q 8-12 hrs -Gelatin-coated tablet: q 8-12 hrs <u>Kids &amp; geriatrics:</u> q 8-12 hrs<sup>11</sup> <u>Adults:</u> q 8 hrs Dosage timing varies based on condition.<sup>32</sup></p>	<p>For "moderate" to "severe" pain when used with an adjunctive opioid<sup>5</sup>.</p> <p><u>Nutrition-related side effects:</u> constipation, diarrhea, dyspepsia, flatulence, nausea, stomach pain, stomatitis, vomiting, xerostomia<sup>41</sup></p> <p><u>To prevent constipation:</u> Drink 6 - 8 full glasses of water/day. Increase dietary fiber.<sup>2</sup></p> <p><u>To reduce stomach upset:</u> Take with a meal or with milk. Limit caffeine.<sup>3, 41</sup></p> <p><u>MAJOR Interactions:</u> danshen, dong quai, evening primrose oil, ginkgo, policosanol, St John's wort, willow bark.<sup>31</sup></p> <p><u>Special Alerts:</u> Diabetes, closely monitor<sup>32</sup></p>
<p><u>naproxen</u> <i>(Prescription)</i></p> <p>Anaprox<sup>®</sup> Anaprox<sup>®</sup> DS EC-Naprosyn<sup>®</sup> Naprosyn<sup>®</sup> Naprosyn<sup>®</sup> Suspension</p>	<p><u>Non-steroidal anti-inflammatory formulation</u> <i>(Used with fever, headaches, muscle aches, arthritis, gout, menstrual periods, common cold, toothache, backache &amp; Paget's disease)</i><sup>2</sup></p> <p>-Tablet -Tablet, enteric coated, delayed-release -Tablet, extended-release -Suspension (liquid)</p> <p>Dosage timing varies based on condition.<sup>32</sup></p>	<p>For "moderate" to "severe" pain when used with an adjunctive opioid<sup>5</sup></p> <p><u>Nutrition-related side effects:</u> constipation, diarrhea, dyspepsia, flatulence, nausea, stomach pain, stomatitis, vomiting, xerostomia<sup>41</sup></p> <p><u>To prevent constipation:</u> Drink 6 - 8 full glasses of water/day. Increase dietary fiber.<sup>2</sup></p> <p><u>To reduce stomach upset:</u> Take with a meal or with milk. Limit caffeine.<sup>3, 41</sup></p> <p><u>MAJOR Interactions:</u> danshen, dong quai, evening primrose oil, ginkgo, policosanol, St John's wort, willow bark.<sup>31</sup></p> <p><u>Special Alerts:</u> Diabetes, closely monitor<sup>32</sup></p>



## STEP 2. Opioids (Moderate-to severe pain) *Prescription-only*

The opioids (also called narcotics) is the major supportive therapy for cancer pain management.<sup>40</sup> They are often used concurrently with aspirin, ibuprofen and acetaminophen.<sup>1</sup>

Opioids cause constipation due to its action on slowing gastric and intestinal muscle contractions and movement causing hard stools. Constipation will resolve only if it is treated.<sup>1</sup> Prevention of constipation is recommended.<sup>1,39,39</sup> Constipation is a common problem, occurring in 40%- 95% of patients treated with opioids, and can occur even with one dose of morphine.

If constipation is already present (no BM > 3 days) lactulose may be used to clean out the bowel. If experiencing nausea/vomiting, cleansing enemas may be required.<sup>52</sup>

GENERIC/BRAND NAME	INDICATION/ DOSAGE/FORM	COMMENTS
<p><u>buprenorphine</u> Buprenex<sup>®</sup> Butrans<sup>™</sup> Transdermal Subtex<sup>®</sup></p>	<p><u>Medical opioid formulations</u> (Used for moderate to severe pain)<sup>5</sup> -Tablet -Solution, injection -Transdermal patch: 7 days<sup>32</sup></p>	<p><u>Nutrition-related side effects:</u> constipation, dyspepsia, nausea, stomach pain, vomiting, xerostomia<sup>2,32</sup> <u>Prevent constipation</u><sup>2,5, 39,43</sup> -Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day (Senokot-S<sup>®</sup>, usually 2-4 tablets 2 x/day)<sup>43</sup> -Drink 8-10 glasses of fluids daily. -If able, eat foods high in fiber content, such as raw fresh produce, whole grain products. -If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal. -If able, daily exercise, such as light walking. -Notify healthcare professional if no BM &gt; 2 days. -Increase dose of laxative when opioid is increased<sup>43</sup> <u>Nausea or vomiting:</u> Assess bowel regimen.<sup>52</sup> <u>MAJOR Interactions:</u> alcoholic beverages, butanediol, gamma butyrolactone, gamma-hydroxybutyrate, gotu kola, <u>grapefruit</u><sup>*</sup>, hydrazine sulfate, iron products<sup>32</sup>, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, niacin (nicotinic acid)<sup>32</sup>, St John's wort, sweet bay, thuja, valerian, wild lettuce.<sup>2,31</sup> <u>*Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup> <u>Nutrition-related withdrawal symptoms:</u> abdominal cramps, diarrhea, nausea<sup>2,5</sup></p>

<p><u>buprenorphine + naloxone</u> Suboxone®</p>	<p><u>Mixed opioid formulation</u><sup>5</sup> (Used with opioid dependency) -Tablets, sublingual: one a day -Film, sublingual, one a day</p>	<p>Added to pre-existing opioid regimen; less euphoric side effects, easier to discontinue use<sup>2</sup> <u>Nutrition-related side effects</u>: constipation, diarrhea, nausea, stomach pain, vomiting<sup>32</sup> <u>Prevent constipation</u><sup>2,5, 39,43</sup> -Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S®, usually 2-4 tablets 2 x/day)<sup>43</sup> -Drink 8-10 glasses of fluids daily -If able, eat foods high in fiber content, such as raw fresh produce, whole grain products. -If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal. -If able, daily exercise, such as light walking. -Notify healthcare professional if no BM &gt; 2 days. -Increase dose of laxative when opioid is increased<sup>43</sup> <u>Nausea or vomiting</u>: Assess bowel regimen.<sup>52</sup> <u>MAJOR Interactions</u>: alcoholic beverages, butanediol, gamma butyrolactone, gamma-hydroxybutyrate, gotu kola, <u>grapefruit</u>*, hydrazine sulfate, iron products<sup>32</sup>, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, niacin (nicotinic acid)<sup>32</sup>, St John's wort, sweet bay, thuja, valerian, wild lettuce, yohimbine.<sup>2,31,32</sup> <u>*Grapefruit Interaction</u>: Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup> <u>Nutrition-related withdrawal symptoms</u>: abdominal cramps, diarrhea, nausea<sup>2, 5</sup></p>
<p><u>butorphanol</u> Stadol® Stadol® NS®</p>	<p><u>Medical opioid formulations</u> (Used with migraine headaches, moderate to severe pain)<sup>34</sup> -Solution, I.V. or I.M. q 3-4 hrs -Metered Nasal Spray, 2-dose sequence q 3-4 hrs</p>	<p>Usually not for chronic pain<sup>5</sup>; alters how pain is perceived<sup>34</sup> <u>Nutrition-related side effects</u>: (Nasal spray)- nausea, sore throat, vomiting<sup>34</sup> (Injection)- anorexia, constipation, dysgeusia, nausea, stomach pain, vomiting, xerostomia<sup>32</sup> <u>Prevent constipation</u><sup>2,5, 39,43</sup> -Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S®, usually 2-4 tablets 2 x/day)<sup>43</sup> -Drink 8-10 glasses of fluids daily -If able, eat foods high in fiber content, such as raw fresh produce, whole grain products. -If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal. -If able, daily exercise, such as light walking. -Notify healthcare professional if no BM &gt; 2 days. -Increase dose of laxative when opioid is increased<sup>43</sup> <u>Nausea or vomiting</u>: Assess bowel regimen.<sup>52</sup></p>

		<p><u>MAJOR Interactions:</u> alcoholic beverages, butanediol, gamma butyrolactone, gamma-hydroxybutyrate, gotu kola, <u>grapefruit*</u>, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, St John's wort, sweet bay, thuja, valerian, wild lettuce.<sup>2, 31</sup></p> <p>*<u>Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup></p> <p><u>Nutrition-related withdrawal symptoms:</u> diarrhea<sup>34</sup></p>
<u>codeine</u>	<p><u>Medical opioid formulations</u> (Used to help relieve symptoms, usually combined with other medications, such as aspirin, acetaminophen, and cold medicines to relieve mild to moderate pain)</p> <ul style="list-style-type: none"> <li>-Tablet</li> <li>-Capsule</li> <li>-Liquid solution</li> </ul>	<p><u>Nutrition-related side effects:</u> constipation, nausea, stomach pain, vomiting</p> <p><u>Prevent constipation</u><sup>2,5, 39,43</sup></p> <ul style="list-style-type: none"> <li>-Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S®, usually 2-4 tablets 2 x/day)<sup>43</sup></li> <li>-Drink 8-10 glasses of fluids daily</li> <li>-If able, eat foods high in fiber content, such as raw fresh produce, whole grain products.</li> <li>-If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.</li> <li>-If able, daily exercise, such as light walking.</li> <li>-Notify healthcare professional if no BM &gt; 2 days.</li> <li>-Increase dose of laxative when opioid is increased<sup>43</sup></li> </ul> <p><u>Nausea or vomiting:</u> Assess bowel regimen.<sup>52</sup></p> <p><u>MAJOR Interactions:</u> alcoholic beverages, butanediol, gamma butyrolactone, gamma-hydroxybutyrate, gotu kola, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, St John's wort, sweet bay, thuja, valerian, wild lettuce.<sup>2,31</sup></p>
<p><u>codeine with acetaminophen</u> APAP w/Codeine Capital w/Codeine Pyregesic-C Tylenol® with Codeine #2 Tylenol® w/Codeine #3 Tylenol® w/Codeine #4 Vopac®</p>	<p><u>Medical opioid formulations</u> (Used with relief of moderate to severe pain)<sup>2, 42</sup></p> <ul style="list-style-type: none"> <li>-Tablets q 4 hrs</li> <li>-Capsule</li> <li>-Oral solution (elixir)</li> <li>-Solution</li> <li>-Suspension q 4 hrs</li> </ul> <p><u>Adults:</u> q 4 hrs</p> <p><u>Maximum Daily Dose</u> (acetaminophen) Not &gt; 4 grams/24 hrs or 4,000 mg /24 hrs</p> <p>*The U.S. Food &amp; Drug Admini-</p>	<p>Often associated with higher levels of nausea/vomiting compared with other opioids<sup>5</sup></p> <p><u>Oral suspension</u> used with mild to moderate pain; <u>tablets</u> used for mild to moderately severe pain.<sup>2</sup></p> <p><u>Prevent constipation</u><sup>2,5, 39,43</sup></p> <ul style="list-style-type: none"> <li>-Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S®, usually 2-4 tablets 2 x/day)<sup>43</sup></li> <li>-Drink 8-10 glasses of fluids daily</li> <li>-If able, eat foods high in fiber content, such as raw fresh produce, whole grain products.</li> <li>-If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.</li> <li>-If able, daily exercise, such as light walking.</li> <li>-Notify healthcare professional if no BM &gt; 2 days.</li> <li>-Increase dose of laxative when opioid is increased<sup>43</sup></li> </ul> <p><u>Nutrition-related side effects:</u> anorexia, constipation, nausea, stomach pain, vomiting, xerostomia</p>

	<p>stration is currently investigating the maximum dose.<sup>39</sup></p>	<p><u>To reduce stomach upset:</u> Take with a meal or with milk, although it will decrease effectiveness.<sup>42</sup></p> <p><u>Nausea or vomiting:</u> Assess bowel regimen.<sup>52</sup></p> <p><u>MAJOR Interactions:</u> alcoholic beverages, butanediol, cabbage<sup>2,44</sup>, chaparral, comfrey, gamma butyrolactone, gamma-hydroxybutyrate, gotu kola, <u>grapefruit*</u>, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, St John's wort, sweet bay, thuja, valerian, wild lettuce.<sup>2,31</sup></p> <p><u>*Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup></p> <p><u>Special Alerts:</u> <u>Urinary glucose</u> results with test strips (Chemstrips), falsely lowered<sup>2,3,41</sup>; <u>urinary 5-HIAA</u>, false positive<sup>42</sup>; <u>serum amylase</u>, increased<sup>42</sup></p> <p><u>Nutrition-related withdrawal symptoms:</u> abdominal or stomach cramps, nausea<sup>44</sup></p>
<p>codeine with aspirin<sup>14</sup> Empirin with Codeine®</p>	<p><u>Mixed opioid formulations</u> (Used with mild, moderate, and moderate to severe pain)<sup>42</sup></p> <p>-Tablets -Tablet, Extended Release <u>Adults:</u> q 4 hrs<sup>42</sup> <u>Maximum:</u> not &gt;360 mg/ day</p>	<p>Associated with higher levels of nausea/vomiting compared to other opioids<sup>5</sup></p> <p><u>Nutrition-related side effects:</u> constipation, nausea, stomach pain, vomiting<sup>2,5,39,43</sup></p> <p><u>Prevent constipation</u></p> <p>-Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S®, usually 2-4 tablets 2 x/day)<sup>43</sup></p> <p>-Drink 8-10 glasses of fluids daily</p> <p>-If able, eat foods high in fiber content, such as raw fresh produce, whole grain products.</p> <p>-If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.</p> <p>-Daily exercise, if possible, such as light walking.</p> <p>-Notify healthcare professional if no BM &gt; 2 days.</p> <p>-Increase dose of laxative when opioid is increased<sup>43</sup></p> <p><u>Nausea or vomiting:</u> Assess bowel regimen.<sup>52</sup></p> <p><u>To reduce stomach upset:</u> Take with a meal or with milk.</p> <p><u>MAJOR Interactions:</u> alcoholic beverages, butanediol, danshen, dong quai, evening primrose oil, gamma butyrolactone, gamma-hydroxy-butyrate, ginkgo, gotu kola, <u>grapefruit*</u>, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, policosanol, St John's wort, sweet bay, thuja, valerian, wild lettuce, willow bark.<sup>2,31</sup></p> <p><u>*Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup></p> <p><u>Special Alerts:</u> <u>Diabetic meds</u> (oral &amp; insulin), increased risk for hypoglycemia, closely monitor<sup>42</sup>; <u>serum amylase</u> levels, increased<sup>42</sup></p> <p><u>Nutrition-related withdrawal symptoms:</u> abdominal or stomach cramps, nausea<sup>2</sup></p>

<p>codeine, aspirin + butalbital  Fiorinal® with Codeine<sup>14</sup>  Fiorinal® with Codeine C-III</p>	<p><u>Mixed opioid formulation</u>  <i>(Used with tension headaches)</i><sup>2</sup>  -Capsule q 4 hrs  <u>Maximum Daily Dose</u>  Not &gt; 6 capsules/day</p>	<p><u>Nutrition-related side effects:</u> dyspepsia, flatulence, indigestion, nausea, stomach pain  <u>To reduce stomach upset:</u> Take with a meal or with milk.  <u>Prevent constipation</u><sup>2,5,39,43</sup>  -Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S®), usually 2-4 tablets 2 x/day)<sup>43</sup>  -Drink 8-10 glasses of fluids daily  -If able, eat foods high in fiber content, such as raw fresh produce, whole grain products.  -If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.  -Daily exercise, if possible, such as light walking.  -Notify healthcare professional if no BM &gt; 2 days.  -Increase dose of laxative when opioid is increased<sup>43</sup>  <u>MAJOR Interactions:</u> Alcoholic beverages<sup>2</sup>, Country mallow, danshen, dong quai, ephedra, evening primrose, ginkgo, <u>grapefruit*</u>, Indian snakeroot, peyote, policosanol, St. John's wort, tiratricol, willow bark.<sup>31</sup>  *<u>Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup>  <u>Special Alerts:</u> <u>Diabetic meds</u> (oral &amp; insulin), increased risk for hypoglycemia; closely monitor<sup>2</sup></p>
<p><u>dihydrocodeine bitartrate, aspirin, caffeine</u>  Synalgos-DC®</p>	<p><u>Mixed opioid formulation</u>  <i>(Used with moderate to moderately severe pain;</i><sup>2</sup>  <i>weak opioid, rarely prescribed for chronic pain)</i><sup>5</sup>  -Capsule  <u>Adults:</u> q 4 hrs</p>	<p><u>Nutrition-related side effects:</u> constipation, dyspepsia, nausea, vomiting<sup>2</sup>  <u>Prevent constipation</u><sup>2,5,39,43</sup>  -Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S®), usually 2-4 tablets 2 x/day)<sup>43</sup>  -Drink 8-10 glasses of fluids daily  -If able, eat foods high in fiber content, such as raw fresh produce, whole grain products.  -If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.  -Daily exercise, if possible, such as light walking.  -Notify healthcare professional if no BM &gt; 2 days.  -Increase dose of laxative when opioid is increased<sup>43</sup>  <u>Nausea or vomiting:</u> Assess bowel regimen.<sup>52</sup>  <u>To reduce stomach upset:</u> Take with a meal or with milk.  <u>MAJOR Interactions:</u> Alcoholic beverages, butanediol, Country mallow, danshen, dong quai, ephedra, evening primrose oil, gamma butyrolactone, gamma-hydroxybutyrate, ginkgo, gotu kola, <u>grapefruit*</u>, hydrazine sulfate, Indian snakeroot, Jamaican dogwood, kava, L-tryptophan, marijuana, marsh tea, melatonin, motherwort, peyote, policosanol, St John's wort, sweet bay, thuja, tiratricol, valerian, wild lettuce, willow bark.<sup>2,31</sup>  *<u>Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup>  <u>Special Alerts:</u> <u>Diabetic meds</u>, such as insulin, meglitinide, nateglinide (Starlix®),</p>

		<p>repaglinide (Prandin<sup>®</sup>), glyburide, (DiaBeta<sup>®</sup>, Glynase PresTab<sup>®</sup>, Micronase<sup>®</sup>), and tolbutamide (Orinase<sup>®</sup>, Tol-Tab<sup>®</sup>), increased risk of side effects <sup>2</sup></p> <p><u>Nutrition-related withdrawal symptoms:</u> abdominal or stomach cramps, nausea <sup>2</sup></p>
<p><u>hydrocodone +acetaminophen</u>  Anexsia<sup>®</sup>  Axocet<sup>®</sup>  Co-gesic  Dolorex Forte<sup>®</sup>  Hycet<sup>®</sup>  Hydrocet<sup>®</sup>  Liquicet<sup>®</sup>  Lorcet<sup>®</sup>  Lortab<sup>®</sup>  Norco<sup>®</sup>  Maxidone<sup>®</sup>  Polygesic<sup>®</sup>  Stagesic<sup>®</sup>  Vicodin<sup>®</sup>  Vicodin<sup>®</sup> ES  Vicodin<sup>®</sup> HP  Xodol<sup>®</sup>  Zamicet<sup>®</sup>  Zydone<sup>®</sup></p>	<p><u>Mixed opioid formulations</u>  <i>(Used with moderate to severe pain)</i> <sup>2</sup></p> <p>-Tablets  -Capsules  -Elixir  -Solution</p> <p><u>Adults:</u> q 4-6 hrs  <u>Maximum (Adult):</u> 8 tablets/day</p> <p><u>Maximum Daily Dose</u>  (acetaminophen)  1 gm/dose (1000 mg/dose) or 4 gm/day or (4000 mg/day)</p> <p>Vicodin<sup>®</sup> may contain up to 750 mg acetaminophen/tablet</p> <p><i>*The U.S. Food &amp; Drug Administration is currently investigating the maximum dose.</i> <sup>39</sup></p>	<p><u>Nutrition-related side effects:</u> constipation, nausea, vomiting.</p> <p><u>Prevent constipation</u> <sup>2,5,39,43</sup></p> <p>-Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S<sup>®</sup>, usually 2-4 tablets 2 x/day) <sup>43</sup></p> <p>-Drink 8-10 glasses of fluids daily</p> <p>-If able, eat foods high in fiber content, such as raw fresh produce, whole grain products</p> <p>-If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.</p> <p>-Daily exercise, if possible, such as light walking.</p> <p>-Notify healthcare professional if no BM &gt; 2 days.</p> <p>-Increase dose of laxative when opioid is increased <sup>43</sup></p> <p><u>Nausea or vomiting:</u> Assess bowel regimen. <sup>52</sup></p> <p><u>To reduce stomach upset:</u> Take with a meal or with milk.</p> <p><u>MAJOR Interactions:</u> alcoholic beverages, butanediol, cabbage<sup>2</sup>, chaparral, comfrey, gamma butyrolactone, gamma-hydroxybutyrate, gotu kola, <u>grapefruit*</u>, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, St John's wort, sweet bay, thuja, valerian, wild lettuce. <sup>2,31</sup></p> <p><u>*Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos <sup>27,28,29</sup></p> <p><u>Special Alerts:</u> <u>Urinary 5-HIAA,</u> false positive results <sup>2</sup></p> <p><u>Nutrition-related withdrawal symptoms:</u> abdominal or stomach cramps, nausea <sup>2</sup></p>
<p><u>hydrocodone with ibuprofen</u>  Ibudone  Reprexain<sup>™</sup>  Vicoprofen<sup>®</sup></p>	<p><u>Mixed opioid formulation</u>  <i>(Used short-term to relieve severe pain)</i> <sup>2</sup></p> <p>-Tablets</p> <p><u>Adults:</u> q 4-6 hrs  <u>Maximum Daily Dose</u>  not &gt; 5 tablets/ 24-hr</p>	<p><u>Nutrition-related side effects:</u> anorexia, constipation, diarrhea, dyspepsia, flatulence, nausea, vomiting, xerostomia</p> <p><u>Prevent constipation</u> <sup>2,5,39,43</sup></p> <p>-Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S<sup>®</sup>, usually 2-4 tablets 2 x/day) <sup>43</sup></p> <p>-Drink 8-10 glasses of fluids daily</p> <p>-If able, eat foods high in fiber content, such as raw fresh produce, whole grain products.</p> <p>-If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.</p> <p>-Daily exercise, if possible, such as light walking.</p> <p>-Notify healthcare professional if no BM &gt; 2 days.</p> <p>-Increase dose of laxative when opioid is increased <sup>43</sup></p> <p><u>Nausea or vomiting:</u> Assess bowel regimen. <sup>52</sup></p> <p><u>To reduce stomach upset:</u> Take with a meal or with milk.</p> <p><u>MAJOR Interactions:</u> alcoholic beverages, beta glucans <sup>2</sup>, butanediol, danshen, dong</p>

		<p>quai, evening primrose oil, gamma butyrolactone, gamma-hydroxy-butyrate, ginkgo, gotu kola, <u>grapefruit*</u>, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, policosanol, St John's wort, sweet bay, thuja, valerian, wild lettuce, willow bark.<sup>2,31</sup></p> <p><u>*Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup></p> <p><u>Special Alerts:</u> <u>Diabetic meds</u>, glipizide, glyburide, tolbutamide, increased risk of certain side effects<sup>2</sup></p>
<p><u>hydromorphone</u> Dilaudid® Dilaudid-5 Exalgo™<sup>16</sup></p>	<p><u>Medical opioid formulation</u> (Used to treat moderate to severe pain. The extended-release formulation is to provide around-the-clock pain relief)<sup>2</sup></p> <ul style="list-style-type: none"> <li>-Tablets: q 4-6 hrs</li> <li>-Oral liquid: q 3-6 hrs</li> <li>-Tablets, ER, q 24 hrs</li> <li>-Suppository, rectal</li> <li>-Solution, I.V., Sub-Q, PCA, or epidural<sup>2</sup></li> </ul> <p>(ER-extended-release)</p>	<p><u>Nutrition-related side effects:</u> constipation, nausea, vomiting, xerostomia</p> <p><u>Prevent constipation</u><sup>2,5,39,43</sup></p> <ul style="list-style-type: none"> <li>-Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S®, usually 2-4 tablets 2 x/day)<sup>43</sup></li> <li>-Drink 8-10 glasses of fluids daily</li> <li>-If able, eat foods high in fiber content, such as raw fresh produce, whole grain products.</li> <li>-If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.</li> <li>-Daily exercise, if possible, such as light walking.</li> <li>-Notify healthcare professional if no BM &gt; 2 days.</li> <li>-Increase dose of laxative when opioid is increased<sup>43</sup></li> </ul> <p><u>Nausea or vomiting:</u> Assess bowel regimen.<sup>52</sup></p> <p><u>To reduce stomach upset:</u> Take with a meal or with milk.</p> <p><u>Major Interactions:</u> alcoholic beverages, butanediol, gamma butyrolactone, gamma-hydroxybutyrate, gotu kola, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, St John's wort, sweet bay, thuja, valerian, wild lettuce.<sup>2,31</sup></p> <p><u>Special Alert:</u> <u>Sulfite sensitivity</u><sup>2</sup></p> <p><u>Nutrition-related withdrawal symptoms:</u> abdominal cramps, anorexia, diarrhea, nausea, vomiting<sup>2</sup></p>
<p><u>fentanyl</u> Actiq® Duragesic® Fentora® Onsolis™ Sublimaze</p>	<p><u>Medical opioid formulations</u> (Used for treating cancer-related pain)<sup>2</sup></p> <ul style="list-style-type: none"> <li>-Buccal soluble film: &gt; q 2 hrs (Limit: 4 or less doses/day)</li> </ul> <ul style="list-style-type: none"> <li>-Lozenge (&gt; 16 yrs old) &gt; 4 hrs for new episode of breakthrough pain</li> </ul> <p><u>Maximum lozenge/day:</u> 4 or less</p> <ul style="list-style-type: none"> <li>-Solution, I.V., Sub-Q or injection</li> </ul>	<p>Strong opioid; prerequisite: similar opioid medicine with tolerance developed<sup>2</sup></p> <p>Oral transmucosal (buccal) fentanyl is for treating "breakthrough" cancer pain<sup>2,40</sup></p> <p>Actiq® is used only to treat "breakthrough pain" in patients with cancer (&gt; 16 yrs), who are regularly using opioid pain medicines around-the-clock for constant cancer pain<sup>2</sup></p> <p><u>Nutrition-related side effects:</u> (Lozenge or tablet)-constipation, dental problems (lozenge contains sugar) nausea, stomatitis, vomiting<sup>2</sup></p> <p>(Transdermal patch)-anorexia, constipation, diarrhea, dyspepsia, nausea, stomach pain, vomiting</p> <p><u>Prevent constipation</u><sup>2,5,39,43</sup></p> <ul style="list-style-type: none"> <li>-Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S®, usually 2-4 tablets 2 x/day)<sup>43</sup></li> </ul>

	<p>-Transdermal patch ER, q 72 hrs</p> <p>Dose for fentanyl is individualized.<sup>32</sup></p> <p>Each patient should be individually titrated to provide adequate pain relief and minimize side effects<sup>2</sup></p> <p><u>(ER-extended-release)</u></p>	<p><u>Prevent constipation</u><sup>2,5,39,43</sup></p> <p>-Drink 8-10 glasses of fluids daily</p> <p>-If able, eat foods high in fiber content, such as raw fresh produce, whole grain products.</p> <p>-If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.</p> <p>-Daily exercise, if possible, such as light walking.</p> <p>-Notify healthcare professional if no BM &gt; 2 days.</p> <p>-Increase dose of laxative when opioid is increased<sup>43</sup></p> <p><u>Nausea or vomiting:</u> Assess bowel regimen.<sup>52</sup></p> <p><u>MAJOR Interactions:</u> alcoholic beverages, butanediol, gamma butyrolactone, gamma-hydroxybutyrate, gotu kola, <u>grapefruit*</u>, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, St John's wort, sweet bay, thuja, valerian, wild lettuce.<sup>2,31</sup></p> <p><u>*Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup></p> <p><u>Special Alert:</u> Diabetic: Actiq<sup>®</sup> contains ~ 2 gms of sugar/ unit.<sup>2</sup></p>
<p><u>levorphanol</u> Levo-Dromoran<sup>®</sup></p>	<p><u>Medical opioid formulations</u> (Used to treat moderate to severe pain)</p> <p>-Tablets, q 6-8 hrs</p> <p>-Solution, I.M. or Sub-Q, q 6 -8 hrs, I.V. q 3- 6 hrs</p>	<p>Strong opioid, 4 - 8 times as potent as morphine<sup>24</sup></p> <p><u>Nutrition-related side effects:</u> constipation, nausea, stomach pain, vomiting, xerostomia</p> <p><u>Prevent constipation</u><sup>2,5,39,43</sup></p> <p>-Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S<sup>®</sup>, usually 2-4 tablets 2 x/day)<sup>43</sup></p> <p>-Drink 8-10 glasses of fluids daily</p> <p>-If able, eat foods high in fiber content, such as raw fresh produce, whole grain products.</p> <p>-If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.</p> <p>-Daily exercise, if possible, such as light walking.</p> <p>-Notify healthcare professional if no BM &gt; 2 days.</p> <p>-Increase dose of laxative when opioid is increased<sup>43</sup></p> <p><u>Nausea or vomiting:</u> Assess bowel regimen.<sup>52</sup></p> <p><u>To reduce stomach upset:</u> Take with a meal or with milk.</p> <p><u>MAJOR Interactions:</u> alcoholic beverages, butanediol, gamma butyrolactone, gamma-hydroxybutyrate, gotu kola, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, St John's wort, sweet bay, thuja, valerian, wild lettuce.<sup>2,31</sup></p>
<p><u>meriperidine</u> Demerol<sup>®</sup></p>	<p><u>Medical opioid formulations</u> (Used to treat moderate to severe pain)<sup>2</sup></p> <p>-Tablets q 4 hrs</p> <p>-Solution, by I.V., I.M., Sub-Q, q 4</p>	<p>Strong opioid, low potency, significantly less effective orally than by the parenteral route<sup>2</sup>, generally <u>not</u> used with chronic pain<sup>5</sup></p> <p>Toxicity (seizures, delirium &amp; other neuropsych changes) compared to other opioids,<sup>5</sup></p> <p><u>Nutrition-related side effects:</u> anorexia, constipation, nausea, vomiting</p>



	<p>hrs or continuous I.V.</p>	<p><u>Prevent constipation</u><sup>2,5,39,43</sup></p> <ul style="list-style-type: none"> <li>-Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S®, usually 2-4 tablets 2 x/day)<sup>43</sup></li> <li>-Drink 8-10 glasses of fluids daily</li> <li>-If able, eat foods high in fiber content, such as raw fresh produce, whole grain products.</li> <li>-If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.</li> <li>-Daily exercise, if possible, such as light walking.</li> <li>-Notify healthcare professional if no BM &gt; 2 days.</li> <li>-Increase dose of laxative when opioid is increased<sup>43</sup></li> </ul> <p><u>Nausea or vomiting</u>: Assess bowel regimen.<sup>52</sup></p> <p><u>To reduce stomach upset</u>: Take with a meal or with milk.</p> <p><u>MAJOR Interaction</u>: St John's wort.<sup>31</sup></p> <p><u>Nutrition-related withdrawal symptoms</u>: abdominal cramps, anorexia, diarrhea, nausea, vomiting<sup>2</sup></p>
<p><u>methadone</u> Diskets® Dispersible Tablets Dolophine® Methadose®</p>	<p><u>Medical opioid formulations</u> <i>(Used to treat moderate to severe pain which has not responsive to nonopioid treatment; reduces withdrawal symptoms in narcotic drug &amp; heroin addiction, and part of a drug detox &amp; maintenance program)</i><sup>2</sup></p> <ul style="list-style-type: none"> <li>-Tablets, q 3-12 hrs</li> <li>-I.V., I.M., Sub-Q., q 3-6 hrs</li> <li>-Tablets, dispersible (Diskets)</li> <li>-Oral solution (liquid)</li> </ul> <p>Effective pain relief usually takes 3 - 5 days of use.<sup>5</sup></p>	<p>Strong opioid, rapid onset of action<sup>2</sup></p> <p><u>Tablet, dispersible</u> (Diskets) Dissolve in 4 oz of orange juice, Tang®, citrus flavors of Kool-Aid® or other acidic fruit beverage (<u>not grapefruit</u>). Allow the tablet to disperse in the liquid. Drink immediately.</p> <p><u>Nutrition-related side effects</u>: constipation, nausea, vomiting, xerostomia</p> <p><u>Prevent constipation</u><sup>2,5,39,43</sup></p> <ul style="list-style-type: none"> <li>-Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S®, usually 2-4 tablets 2 x/day)<sup>43</sup></li> <li>-Drink 8-10 glasses of fluids daily</li> <li>-If able, eat foods high in fiber content, such as raw fresh produce, whole grain products.</li> <li>-If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.</li> <li>-Daily exercise, if possible, such as light walking.</li> <li>-Notify healthcare professional if no BM &gt; 2 days.</li> <li>-Increase dose of laxative when opioid is increased<sup>43</sup></li> </ul> <p><u>Nausea or vomiting</u>: Assess bowel regimen.<sup>52</sup></p> <p><u>To reduce stomach upset</u>: Take with a meal or with milk.</p> <p><u>MAJOR Interactions</u>: alcoholic beverages, butanediol, gamma butyrolactone, gamma-hydroxybutyrate, gotu kola, <u>grapefruit*</u>, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, St John's wort, sweet bay, thuja, valerian, wild lettuce.<sup>2,31</sup></p> <p><u>*Grapefruit Interaction</u>: Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup></p> <p><u>Nutrition-related withdrawal symptoms</u>: diarrhea, nausea, vomiting<sup>2</sup></p>

<p><u>morphine</u>  Astramorph PF  Avinza<sup>®</sup>  Duramorph<sup>®</sup>  Embeda<sup>™</sup>  Infumorph<sup>™</sup>  Kadian<sup>®</sup>  Kadian<sup>®</sup> ER  MS-Contin<sup>®</sup>  MSIR  Ora-morph SR<sup>®</sup>  Roxanol<sup>™</sup>  Roxanol-T</p>	<p><u>Medical opioid formulations</u>  <i>(Used to treat moderate to severe pain, dulling the brain's pain perception center)</i><sup>2</sup>  -Capsule  -Capsule, delayed release  -Capsule, ER: One (1) x/day  -Capsule, ER, 24 HR  -Powder for suspension, ER  -Tablet: q 4 hrs PRN  -Tablet, ER: q 8 -12 hrs  -Solution, oral : q 4 hrs  -Solution, I.V., epidural or intrathecal  -Syrup  -Suppositories</p>	<p><u>Nutrition-related side effects:</u> anorexia, constipation, diarrhea, nausea, stomach pain, vomiting, weight loss<sup>2,5, 39,43</sup>  <u>Prevent constipation</u><sup>2,5, 39,43</sup>  -Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S<sup>®</sup>, usually 2-4 tablets 2 x/day)<sup>43</sup>  -Drink 8-10 glasses of fluids daily  -If able, eat foods high in fiber content, such as raw fresh produce, whole grain products.  -If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.  -Daily exercise, if possible, such as light walking.  -Notify healthcare professional if no BM &gt; 2 days.  -Increase dose of laxative when opioid is increased<sup>43</sup>  <u>Nausea or vomiting:</u> Assess bowel regimen.<sup>52</sup>  <u>To reduce stomach upset:</u> Take with a meal or with milk.  <u>MAJOR Interactions:</u> alcoholic beverages, butanediol, gamma butyrolactone, gamma-hydroxybutyrate, gotu kola, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, policosanol, St John's wort, sweet bay, thuja, valerian, wild lettuce.<sup>2,31</sup>  <u>Nutrition-related withdrawal symptoms:</u> diarrhea, nausea, vomiting<sup>2</sup></p>
<p><u>oxycodone</u><sup>17,19,32</sup>  Dazidox<sup>®</sup>  Endocodone<sup>®</sup>  ETH-Oxydose<sup>®</sup>  Oxycontin<sup>®</sup>  Oxyfast<sup>®</sup>  OxyIR<sup>®</sup>  Percolone<sup>®</sup>  Roxicodone<sup>®</sup></p>	<p><u>Medical opioid formulations</u>  <i>(Used used to treat moderate to severe pain)</i><sup>2</sup>  -Capsule q 4-6 hrs  -Tablet, regular: q 4 hrs  -Tablet, ER: q 12 hrs  -Liquid concentrate: q 4 hrs  -Solution, liquid: q 4hrs   (ER-Extended-release)</p>	<p><u>Concentrate solution-</u>Mix with at least 1 oz (30 mL) of juice or other liquid, or with applesauce or pudding<sup>32</sup>  <u>Nutrition-related side effects:</u> constipation, nausea, vomiting, xerostomia<sup>17</sup>  <u>Prevent constipation</u><sup>2,5, 39,43</sup>  -Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S<sup>®</sup>, usually 2-4 tablets 2 x/day)<sup>43</sup>  -Drink 8-10 glasses of fluids daily  -If able, eat foods high in fiber content, such as raw fresh produce, whole grain products.  -If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.  -Daily exercise, if possible, such as light walking.  -Notify healthcare professional if no BM &gt; 2 days.  -Increase dose of laxative when opioid is increased<sup>43</sup>  <u>Nausea or vomiting:</u> Assess bowel regimen.<sup>52</sup>  <u>To reduce stomach upset:</u> Take with a meal or with milk.  <u>MAJOR Interactions:</u> alcoholic beverages, butanediol, gamma butyrolactone, gamma-hydroxybutyrate, gotu kola, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, policosanol, St John's wort, sweet bay, thuja, valerian, wild lettuce.<sup>2,31</sup>  <u>Special Alert:</u> Limit fat content of meals with 160 mg tablets<sup>17</sup>  <u>Nutrition-related withdrawal symptoms:</u> anorexia, cramps, diarrhea, nausea, vomiting<sup>32</sup></p>

<p><u>oxycodone with acetaminophen</u>  Endocet<sup>®</sup>  Magnacet<sup>®</sup>  Narvox<sup>®</sup>  Percocet<sup>®</sup>  Perloxx<sup>®</sup>  Primalev<sup>®</sup>  Primlev<sup>®</sup>  Roxicet<sup>®</sup>  Roxilox<sup>®</sup>  Tylox<sup>®</sup>  Xolox<sup>®</sup></p>	<p><u>Mixed opioid formulations</u>  <i>(Used to relieve moderate to severe pain)</i><sup>2</sup>  -Tablets  -Capsule  -Solution, oral  <u>Adult /Geriatrics:</u> q 6 hrs  <u>Pediatrics:</u> q 4-6 hrs  <u>Severe pain:</u> q 3-4 hrs  <u>oxycodone + acetaminophen</u><sup>21</sup>  One (1) tablet may contain up to 650 mg of acetaminophen   <u>Maximum Daily Dose</u>  (acetaminophen)  1 gm /dose (1000 mg/ dose) or 4 gm/day or (4000 mg/day)   <i>*The U.S. Food &amp; Drug Administration is currently investigating the maximum dose.</i><sup>39</sup></p>	<p>Strong opioid  <u>Nutrition-related side effects:</u> constipation, nausea, vomiting  <u>Prevent constipation</u><sup>2,5,39,43</sup>  -Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S<sup>®</sup>, usually 2-4 tablets 2 x/day)<sup>43</sup>  -Drink 8-10 glasses of fluids daily  -If able, eat foods high in fiber content, such as raw fresh produce, whole grain products.  -If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.  -Daily exercise, if possible, such as light walking.  -Notify healthcare professional if no BM &gt; 2 days.  -Increase dose of laxative when opioid is increased<sup>43</sup>  <u>Nausea or vomiting:</u> Assess bowel regimen.<sup>52</sup>  <u>To reduce stomach upset:</u> Take with a meal or with milk.  <u>MAJOR Interactions:</u> alcoholic beverages, butanediol, cabbage<sup>2</sup>, chaparral, comfrey, gamma butyrolactone, gamma-hydroxybutyrate, gotu kola, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, St John's wort, sweet bay, thuja, valerian, wild lettuce.<sup>2,31</sup>  <u>Nutrition-related withdrawal symptoms:</u> abdominal or stomach cramps, nausea<sup>2</sup></p>
<p><u>oxycodone with aspirin</u>  Endodan<sup>®</sup>  Percodan<sup>®</sup>  Roxiprin</p>	<p><u>Mixed opioid formulation</u>  <i>(Used to relieve moderate to severe pain)</i><sup>2</sup>  -Tablet q 6 hrs  <u>Maximum Aspirin Dose:</u>  not &gt; 4 grams or 12 tablets/day</p>	<p><u>Nutrition-related side effects:</u> constipation, dyspepsia, nausea, vomiting  <u>Prevent constipation</u><sup>2,5,39,43</sup>  -Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S<sup>®</sup>, usually 2-4 tablets 2 x/day)<sup>43</sup>  -Drink 8-10 glasses of fluids daily  -If able, eat foods high in fiber content, such as raw fresh produce, whole grain products.  -If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.  -Daily exercise, if possible, such as light walking.  -Notify healthcare professional if no BM &gt; 2 days.  -Increase dose of laxative when opioid is increased<sup>43</sup>  <u>Nausea or vomiting:</u> Assess bowel regimen.<sup>52</sup>  <u>To reduce stomach upset:</u> Take with a meal or with milk.  <u>(MAJOR Interactions:</u> alcoholic beverages, butanediol, danshen, dong quai, evening primrose oil, gamma butyrolactone, gamma-hydroxybutyrate, ginkgo, gotu kola, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, policosanol, St John's wort, sweet bay, thuja, valerian, wild lettuce, willow bark.<sup>2,31</sup>  <u>Special Alert:</u> <u>Diabetic meds</u> (insulin &amp; oral), increased risk for hypoglycemia, closely monitor<sup>2,22</sup>  <u>Nutrition-related withdrawal symptoms:</u> abdominal or stomach cramps, nausea<sup>2</sup></p>

<p><u>oxycodone with ibuprofen</u> Combunox™</p>	<p><u>Mixed opioid formulation</u> (Used short-term not &gt; 7 days to relieve moderate to severe pain)<sup>2</sup> -Tablets, q -6 hrs <u>Maximum:</u> Not &gt; 4 tablets/ 24 hrs</p>	<p><u>Nutrition-related side effects:</u> constipation, diarrhea, dyspepsia, nausea, vomiting, xerostomia<sup>2</sup> <u>Prevent constipation</u><sup>2,5, 39,43</sup> -Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S®, usually 2-4 tablets 2 x/day)<sup>43</sup> -Drink 8-10 glasses of fluids daily -If able, eat foods high in fiber content, such as raw fresh produce, whole grain products. -If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal. -Daily exercise, if possible, such as light walking. -Notify healthcare professional if no BM &gt; 2 days. -Increase dose of laxative when opioid is increased<sup>43</sup> <u>Nausea or vomiting:</u> Assess bowel regimen.<sup>52</sup> <u>To reduce stomach upset:</u> Take with a meal or with milk. <u>MAJOR Interactions:</u> alcoholic beverages, beta glucan<sup>2</sup>, butanediol, danshen, dong quai, evening primrose oil, gamma butyrolactone, gamma-hydroxy-butyrate, ginkgo, gotu kola, <u>grapefruit*</u>, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, policosanol, St John's wort, sweet bay, thuja, valerian, wild lettuce, willow bark.<sup>2, 31</sup> <u>*Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup> <u>Special Alert:</u> <u>Diabetic meds</u> (glipizide, glyburide, tolbutamide), increased risk of certain side effects<sup>2</sup> <u>Nutrition-related withdrawal symptoms:</u> diarrhea, nausea, vomiting<sup>2</sup></p>
<p><u>oxymorphone</u> Numorphan® Opana® Opana ER®</p>	<p><u>Medical opioid formulations</u> (Used to treat moderate to severe pain)<sup>2</sup> -Tablet, IR: q 4-6-hrs -Tablet, ER: q 12 hrs -Solution, I.M. or Sub-Q, q 4-6-hrs -I.V. -Suppository (rectal): q 4-6 hrs (IR-immediate release) (ER-extended-release)</p>	<p><u>Opana ER tablet:</u> Taken on an empty stomach, at least 1 hr before or 2 hrs after a meal<sup>2</sup> <u>Nutrition-related side effects:</u> constipation, nausea, vomiting, xerostomia <u>Prevent constipation</u><sup>2,5, 39,43</sup> -Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S®, usually 2-4 tablets 2 x/day)<sup>43</sup> -Drink 8-10 glasses of fluids daily -If able, eat foods high in fiber content, such as raw fresh produce, whole grain products. -If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal. -Daily exercise, if possible, such as light walking. -Notify healthcare professional if no BM &gt; 2 days. -Increase dose of laxative when opioid is increased<sup>43</sup> <u>Nausea or vomiting:</u> Assess bowel regimen.<sup>52</sup></p>

		<p><u>MAJOR Interactions:</u> alcoholic beverages, butanediol, gamma butyrolactone, gamma-hydroxybutyrate, gotu kola, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, St John's wort, sweet bay, valerian, wild lettuce.<sup>2,31</sup></p> <p><u>Nutrition-related withdrawal symptoms:</u> diarrhea, nausea, vomiting<sup>2</sup></p>
<p><u>pentazocine</u> Talwin® Talwin Lactate</p>	<p><u>Medical opioid formulation</u> (Used to treat moderate to severe pain)<sup>2</sup> -Injection only q 3-4 hrs I.M., Sub-Q., I.V.</p>	<p>Strong opioid, rarely used for chronic pain, due to hallucinations and other psychosis-like side-effects<sup>5</sup></p> <p><u>Nutrition-related side effects:</u> constipation, dysguesia, nausea, vomiting<sup>2</sup></p> <p><u>Prevent constipation</u><sup>2,5,39,43</sup></p> <ul style="list-style-type: none"> <li>-Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S®, usually 2-4 tablets 2 x/day)<sup>43</sup></li> <li>-Drink 8-10 glasses of fluids daily</li> <li>-If able, eat foods high in fiber content, such as raw fresh produce, whole grain products.</li> <li>-If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.</li> <li>-Daily exercise, if possible, such as light walking.</li> <li>-Notify healthcare professional if no BM &gt; 2 days.</li> <li>-Increase dose of laxative when opioid is increased<sup>43</sup></li> </ul> <p><u>Nausea or vomiting:</u> Assess bowel regimen.<sup>52</sup></p> <p><u>MAJOR Interactions:</u> alcoholic beverages, butanediol, gamma butyrolactone, gamma-hydroxybutyrate, gotu kola, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, St John's wort, sweet bay, thuja, valerian, wild lettuce.<sup>2,31</sup></p> <p><u>Nutrition-related withdrawal symptoms:</u> stomach pain<sup>2</sup></p>
<p><u>pentazocine with acetaminophen</u> APAP/Pentazocine HCl Talacen®</p>	<p><u>Medical opioid formulation</u> (Used to treat mild to moderate pain)<sup>2</sup> -Tablets: q 4 hrs, up to 6/day -Caplets: q 4 hrs, up to 6/day</p> <p><u>Maximum Daily Dose</u> (acetaminophen) 1 gm /dose (1000 mg/ dose) or 4 gm/day or (4000 mg/day)</p> <p><i>*The U.S. Food &amp; Drug Administration is currently investigating the maximum dose.</i><sup>39</sup></p>	<p>Strong opioid, rarely used for chronic pain, due to hallucinations and other psychosis-like side-effects<sup>5</sup></p> <p><u>Nutrition-related side effects:</u> anorexia, constipation, dyspepsia, nausea, vomiting, xerostomia<sup>2</sup></p> <p><u>Prevent constipation</u><sup>2,5,39,43</sup></p> <ul style="list-style-type: none"> <li>-Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S®, usually 2-4 tablets 2 x/day)<sup>43</sup></li> <li>-Drink 8-10 glasses of fluids daily</li> <li>-If able, eat foods high in fiber content, such as raw fresh produce, whole grain products.</li> <li>-If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.</li> <li>-Daily exercise, if possible, such as light walking.</li> <li>-Notify healthcare professional if no BM &gt; 2 days.</li> <li>-Increase dose of laxative when opioid is increased<sup>43</sup></li> </ul>

		<p><u>Nausea or vomiting</u>: Assess bowel regimen.<sup>52</sup>  <u>To reduce stomach upset</u>: Take with food or milk. <sup>2</sup>  <u>MAJOR Interactions</u>: alcoholic beverages, butanediol, cabbage<sup>2</sup>, chaparral, comfrey, gamma butyrolactone, gamma-hydroxybutyrate, gotu kola, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, St John's wort, sweet bay, thuja, valerian, wild lettuce.<sup>2,31</sup>  <u>Special Alert</u>: <u>Sulfite sensitivity</u> <sup>2</sup>  <u>Nutrition-related withdrawal symptoms</u>: abdominal or stomach cramps, nausea <sup>2</sup></p>
<p><u>tapentadol</u>  Nucynta<sup>®</sup></p>	<p><u>Medical opioid formulation</u>  (Used to treat moderate to severe pain) <sup>2</sup>  -Tablet: q 4- 6 hrs  Day #1. Second dose may be given as soon as 1 hr after 1st dose <sup>26</sup></p>	<p>Clinical trials ( non-oncology population) reported fewer of the GI side effects<sup>15</sup>  <u>Nutrition-related side effects</u>: constipation, nausea, vomiting <sup>2,5,39,43</sup>  <u>Prevent constipation</u>  -Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S<sup>®</sup>, usually 2-4 tablets 2 x/day) <sup>43</sup>  -Drink 8-10 glasses of fluids daily  -If able, eat foods high in fiber content, such as raw fresh produce, whole grain products.  -If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.  -Daily exercise, if possible, such as light walking.  -Notify healthcare professional if no BM &gt; 2 days.  -Increase dose of laxative when opioid is increased <sup>43</sup>  <u>Nausea or vomiting</u>: Assess bowel regimen.<sup>52</sup>  <u>Nutrition-related withdrawal symptoms</u> : diarrhea, nausea <sup>2</sup></p>
<p><u>tramadol</u>  Rybix ODT  Ryzolt<sup>™</sup>  Ultram<sup>®</sup>  Ultram<sup>®</sup> ER</p>	<p><u>Medical opioid formulations</u>  (Used to treat moderate to severe pain) <sup>2</sup>  -Tablet, regular: q 4-6 hrs  -Tablet oral disintegrating: 4-6 hrs  -Tablet, extended release (ER) one (1) /day   <u>Maximum (tablet)</u>: not &gt; 400 mg/day   <u>Maximum, ER Tablet</u>: not &gt; 300 mg/day</p>	<p><u>Nutrition-related side effects</u>: anorexia, constipation, diarrhea, dyspepsia, nausea, vomiting, xerostomia <sup>2,5,39,43</sup>  <u>Prevent constipation</u>  -Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S<sup>®</sup>, usually 2-4 tablets 2 x/day) <sup>43</sup>  -Drink 8-10 glasses of fluids daily  -If able, eat foods high in fiber content, such as raw fresh produce, whole grain products.  -If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.  -Daily exercise, if possible, such as light walking.  -Notify healthcare professional if no BM &gt; 2 days.  -Increase dose of laxative when opioid is increased <sup>43</sup>  <u>Nausea or vomiting</u>: Assess bowel regimen.<sup>52</sup>  <u>To reduce stomach upset</u>: Take with a meal or with milk.</p>

		<p><u>MAJOR Interactions:</u> alcoholic beverages<sup>2</sup>, <u>grapefruit*</u>, St John's wort, thuja<sup>31</sup></p> <p><u>*Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup></p> <p><u>Special Alert: Phenylketonuria (PKU):</u> oral disintegrating tablet may contain phenylalanine<sup>2</sup></p> <p><u>Nutrition-related withdrawal symptoms:</u> diarrhea, nausea<sup>2</sup></p>
<p>tramadol with acetaminophen Ultracet™ Tramacet (Canada)</p>	<p><u>Medical opioid formulation</u> (Used to treat moderate to severe pain, not be used &gt; 5 consecutive days)<sup>2</sup></p> <p>-Tablets</p> <p><u>Adults:</u> q 4- 6 hrs</p> <p><u>Maximum:</u> 2 tablets/dose or 8 tablets/day</p> <p><u>Maximum Daily Dose</u> (acetaminophen) 1 gm /dose (1000 mg/ dose) or 4 gm/day or (4000 mg/day)</p> <p><i>*The U.S. Food &amp; Drug Administration is currently investigating the maximum dose.</i><sup>39</sup></p>	<p>Can be taken with or without food, but take it the same way with each dose<sup>2</sup></p> <p><u>Nutrition-related side effects:</u> anorexia, constipation, diarrhea, nausea<sup>2,5,39,43</sup></p> <p><u>Prevent constipation</u></p> <p>-Stimulant laxative +/- stool softener (e.g., senna +/- docusate, 2 Tabs q AM, maximum 8-12 tablets/day, (Senokot-S®, usually 2-4 tablets 2 x/day)<sup>43</sup></p> <p>-Drink 8-10 glasses of fluids daily</p> <p>-If able, eat foods high in fiber content, such as raw fresh produce, whole grain products.</p> <p>-If able, add 1-2 Tablespoons of bran to food &amp; drink 1 glass of fluids at same meal.</p> <p>-Daily exercise, if possible, such as light walking.</p> <p>-Notify healthcare professional if no BM &gt; 2 days.</p> <p>-Increase dose of laxative when opioid is increased<sup>43</sup></p> <p><u>Nausea or vomiting:</u> Assess bowel regimen.<sup>52</sup></p> <p><u>To reduce stomach upset:</u> Take with food.</p> <p><u>MAJOR Interactions:</u> alcoholic beverages, cabbage<sup>2</sup>, chaparral, comfrey, <u>grapefruit*</u>, St John's wort, thuja.<sup>2,31</sup></p> <p><u>*Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup></p> <p><u>Nutrition-related withdrawal symptoms:</u> diarrhea, headache, nausea<sup>2</sup></p>

### Step 3. Adjuvant Medicines (*Increases analgesic efficacy*)

Some medicines were developed primarily for medical conditions, yet has some pain-relieving properties. Adjuvant medicines are frequently used with the "first-line" or standard cancer pain medicines, (opioids and NSAIDs) to treat the hard to manage, cancer-related (bone or nerve) pain.<sup>45</sup>

GENERIC/BRAND NAME	CLASS-COMMON USE-FORM	COMMENTS
<p><u>amitriptyline</u> Elavil<sup>®</sup> Endep<sup>®</sup> Vanatrip<sup>®</sup></p>	<p><u>Antidepressant formulation</u> (Used to treat symptoms of depression)<sup>2</sup> -Tablet</p>	<p><u>Use in oncology population:</u> to help relieve nerve pain (tingling &amp; burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment<sup>34,45,49</sup> <u>Nutrition-related side effects:</u> appetite changes, constipation, nausea, vomiting, weight changes, xerostomia<sup>2</sup> <u>MAJOR Interactions:</u> 5-HTP, alcoholic beverages, arsenic, butanediol, cesium, country mallow, ephedra, ergot, gamma butyrolactone, gamma-hydroxybutyrate, gotu kola, <u>grapefruit*</u>, Hawaiian baby woodrose, henbane, hydrazine sulfate, Jamaican dogwood, kava, l-tryphophan, lithium, marijuana, marsh tea, melatonin, motherwort, SAME, scopolia, St John's wort, sweet bay, valerian, wild lettuce.<sup>31</sup> <u>*Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup> <u>Nutrition-related withdrawal symptoms:</u> nausea<sup>32</sup></p>
<p><u>baclofen</u> Lioresal<sup>®</sup> Lioresal<sup>®</sup> Intrathecal Lioresal<sup>®</sup> (Canada) Lioresal Double Strength<sup>®</sup> (Canada)</p>	<p><u>Muscle relaxant formulation</u> (Used to relieve muscle tightness, spasms, or cramping resulting from multiple sclerosis)<sup>2</sup> -Tablet, 3 times/day -Injection</p>	<p><u>Use in oncology population:</u> when pain is caused by muscle spasm<sup>49</sup> <u>Nutrition-related side effects:</u> anorexia, constipation, diarrhea, nausea, stomach pain, weight gain<sup>2</sup> <u>MAJOR Interactions:</u> gamma butyrolactone, gamma-hydroxybutyrate, procaine, thuja.<sup>31</sup> <u>Special Alert:</u> Diabetes-monitor closely<sup>2</sup></p>
<p><u>bupropion</u> Aplenzin<sup>®</sup> Wellbutrin<sup>®</sup> Wellbutrin<sup>®</sup> SR Wellbutrin<sup>®</sup> XL</p>	<p><u>Antidepressant formulations</u> (Used to treat major depressive disorder and seasonal affective disorder)<sup>2</sup> -Tablet, 2-3 x/day -Tablet, Extended Release-1 x/day -Tablet, Extended Release, 12 HR -Tablet, Extended Release, 24 HR</p>	<p><u>Use in oncology population:</u> to help relieve nerve pain (tingling &amp; burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment<sup>34,45,49</sup> <u>Nutrition-related side effects:</u> appetite changes, constipation, nausea, stomach pain, vomiting, weight loss, xerostomia<sup>2</sup> <u>To reduce stomach upset:</u> Take with food.<sup>2</sup> <u>MAJOR Interactions:</u> Alcoholic beverages, diet pills, 5-HTP, ergot, Hawaiian</p>



		<p>baby woodrose, l-tryptophan, lithium, SAME, St John's wort, thuja.<sup>2,31</sup>  <u>Special Alerts: Eating disorders<sup>2</sup>; Diabetic oral meds, monitor closely<sup>32</sup></u>  <u>Nutrition-related withdrawal symptoms: nausea<sup>2</sup></u></p>
<p><u>calcitonin salmon</u>  Miacalcin<sup>®</sup>  Miacalcin<sup>®</sup> Nasal  Fortical<sup>®</sup></p>	<p><u>Calcium regulator formulation</u>  <i>(Used in the treatment of postmenopausal osteoporosis)<sup>2</sup></i>  -Injection, I.M. or sub-Q, q 6-12 hrs  -Intranasal spray</p>	<p><u>Use in oncology population:</u> to help relieve the pain of cancer when cancer has bone mets (breast or prostate cancer, or multiple myeloma).<sup>38,45</sup>  <u>Nutrition-related side effects:</u> anorexia, nausea, stomach pain, vomiting<sup>2</sup></p>
<p><u>capsaicin</u>  <i>(Non-prescription)</i>  Arthricare<sup>®</sup> For Women  Capsagesic-HP Arthritis Relief<sup>®</sup>  Capsin<sup>®</sup>  Icy Hot<sup>®</sup> Arthritis Therapy  Theragen<sup>®</sup> HP Top  Therapatch<sup>®</sup> Warm  Trixaicin<sup>®</sup> cream  Zostrix<sup>®</sup>  Axsain<sup>®</sup>  Capsaicin  Capsaicin Hp</p>	<p><u>Local topical analgesic formulations</u>  <i>(Used with muscle sprains, muscle strains, neuralgia &amp; arthritis pain)<sup>36</sup></i>  -Lotion  -Cream  -Gel/Jelly  -Film  -Pad  -Ointment  -Liquid  -Stick  <u>Adults &amp; teens: 3- 4 times/ day<sup>37</sup></u></p>	<p><u>Use in oncology population:</u> for neuropathic and joint pain<sup>36</sup></p>
<p><u>carbamazepine</u>  Carbatrol<sup>®</sup>  Epitol<sup>®</sup>  Equetro<sup>®</sup>  Tegreto<sup>®</sup>  Tegretol<sup>®</sup>-XR</p>	<p><u>Anticonvulsant formulations</u>  <i>(Used to used to treat epileptic seizures, nerve pain, such as trigeminal neuralgia or diabetic neuropathy)<sup>2,49</sup></i>  -Tablet, 2 x/day  -Tablet, chewable, 2 x/day  -Tablet, extended-release, 2x/day  -Capsule, extended-release, 2x/day  -Oral liquid suspension, 4 x/day</p>	<p><u>Use in oncology population:</u> to help control burning &amp; tingling pain; nerve damage pain<sup>34,36</sup>  <u>Nutrition-related side effects:</u> constipation, diarrhea, dyspepsia, nausea, vomiting, xerostomia<sup>2</sup>  <u>To reduce stomach upset:</u> Take oral liquid or tablet with meals.<sup>2</sup>  <u>MAJOR Interactions:</u> alcoholic beverages, chaparral, comfrey, gamma butyrolactone, gamma-hydroxy-butyrate, ginkgo, <u>grapefruit*</u>, niacin (niacinamide), psyllium, St John's wort, tansy ragwort, thuja.<sup>2,31</sup>  <u>*Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup>  <u>Other Interactions:</u> <u>Diabetes</u>, closely monitor<sup>2</sup>; <u>Fructose intolerance</u>, liquid contains sorbitol<sup>2</sup></p>

<p><u>carisoprodol</u> Soma<sup>®</sup> Vanadom<sup>®</sup></p>	<p><u>Skeletal muscle relaxant formulation</u> (Used as a muscle relaxer which works by blocking pain sensation)<sup>2</sup> -Tablet, 4 x/day</p>	<p><u>Use in oncology population:</u> when pain is caused by muscle spasm<sup>49</sup> <u>Nutrition-related side effects:</u> dyspepsia, nausea, vomiting<sup>2</sup> <u>To reduce stomach upset:</u> Take with food or milk.<sup>2</sup> <u>MAJOR Interactions:</u> alcoholic beverages, gamma butyrolactone, gamma-hydroxybutyrate, procaine, St John's wort<sup>2,31</sup> <u>Nutrition-related withdrawal symptoms:</u> stomach pain, nausea<sup>2</sup></p>
<p><u>chlorzoxazone</u> Parafon Forte DSC<sup>®</sup> Paraflex<sup>®</sup> Relaxazone<sup>®</sup> Eze DS<sup>®</sup> Remular<sup>®</sup> Remular-S<sup>®</sup> Strifon Fort<sup>®</sup></p>	<p><u>Skeletal muscle relaxant formulation</u> (Used as a muscle relaxant as part of treatment for skeletal muscle pain or injury)<sup>2</sup> -Tablets, 3-4-x/day</p>	<p><u>Use in oncology population:</u> when pain is caused by muscle spasm<sup>49</sup> <u>Nutrition-related side effects:</u> anorexia, constipation, dysphagia, nausea, stomach pain, vomiting<sup>2</sup> <u>MAJOR Interactions:</u> gamma butyrolactone, gamma-hydroxybutyrate, procaine<sup>31</sup></p>
<p><u>citalopram</u> Celexa<sup>®</sup></p>	<p><u>Antidepressant formulation</u> (Used to treat depression)<sup>2</sup> -Tablet -Solution, oral</p>	<p><u>Use in oncology population:</u> to help relieve nerve pain (tingling &amp; burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment<sup>34,45,49</sup> <u>Nutrition-related side effects:</u> anorexia, diarrhea, dysgeusia, dyspepsia, flatulence, nausea, pharyngitis, stomach pain, vomiting, weight changes, xerostomia<sup>2</sup> <u>MAJOR Interactions:</u> alcoholic beverages, 5-HTP, ergot, ginkgo, <u>grapefruit*</u>, Hawaiian baby woodrose, l-tryptophan, lithium, SAMe, St John's wort, thuja<sup>2,31</sup> <u>*Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup> <u>Nutrition-related withdrawal symptoms:</u> dizziness, nausea<sup>2</sup></p>
<p><u>clodronate</u> <u>clodronic acid</u> (U.S.) <u>Europe, U.K., Canada</u> Bonefos Clasteon Difosfonal Loron Mebonat Ossiten</p>	<p><u>Bisphosphonate formulations</u> (Used for treating osteolytic bone diseases and osteoporosis)<sup>32,49</sup> -Tablet, 1-2 times/day -Capsule, 1-2 times/day -Injection- I.V. over &gt; 2 hrs once a day for 2-5 days</p>	<p><u>Use in oncology population:</u> to help relieve the pain of cancer when cancer has bone mets (breast or prostate cancer, or multiple myeloma).<sup>38,45</sup> <u>Nutrition-related side effects:</u> diarrhea, mouth irritation, nausea, sores in throat, stomach cramps or pain, vomiting<sup>50</sup> <u>Special Alert:</u> Take oral medicine (tablet or capsule) at least 2 hrs before or after eating.<sup>50</sup></p>

<p><u>clomipramine</u> Anafрани®</p>	<p><u>Antidepressant formulation</u> (Used to treat people with obsessive-compulsive disorder)<sup>2</sup> -Capsule, 1 x/day</p>	<p><u>Use in oncology population:</u> to help relieve nerve pain (tingling &amp; burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment<sup>34,45,49</sup> <u>Nutrition-related side effects:</u> appetite changes, constipation, diarrhea, dyspepsia, nausea, vomiting, stomach pain, weight changes, xerostomia<sup>2</sup> <u>To reduce stomach upset:</u> Take capsule with food.<sup>2</sup> <u>MAJOR Interactions:</u> alcoholic beverages, 5-HTP, ergot, <u>grapefruit*</u>, Hawaiian baby woodrose, henbane, l-tryptophan, lithium, SAME, scopolia, St John's wort<sup>31</sup> <u>*Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup> <u>Nutrition-related withdrawal symptoms:</u> nausea, vomiting<sup>32</sup></p>
<p><u>clonazepam</u> Klonopin® Klonopin® Wafer</p>	<p><u>Anticonvulsant formulations</u> (Used to treat seizures, panic disorders)<sup>49</sup> -Tablet, 3x/day -Tablet, oral disintegrating, 3x/day -Solution</p>	<p><u>Use in oncology population:</u> to help control burning &amp; tingling pain; nerve damage pain<sup>34,36</sup> <u>Nutrition-related side effects:</u> anorexia, constipation, diarrhea, nausea, pharyngitis, xerostomia, weight changes<sup>2</sup> <u>MAJOR Interactions:</u> alcoholic beverages, butanediol, gamma butyrolactone, gamma-hydroxybutyrate, ginkgo, gotu kola, <u>grapefruit*</u>, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, St John's wort, sweet bay, thuja, valerian, wild lettuce<sup>2,31</sup> <u>*Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup> <u>Nutrition-related withdrawal symptoms:</u> muscle or stomach cramps, vomiting<sup>2,32</sup></p>
<p><u>clonidine</u> Catapres® Catapres-TTS® Duraclon® Jenloga® Dixaret (Canada)</p>	<p><u>Hypotensive formulations</u> (Used to treat high blood pressure)<sup>2</sup> -Tablet, 2 x/day -Solution -Injectable-epidural continuous infusion -Transdermal, 7 days</p>	<p><u>Use in oncology population:</u> for refractory neuropathic pain<sup>36</sup> <u>Nutrition-related side effects:</u> constipation, nausea, vomiting, xerostomia<sup>2</sup> <u>MAJOR Interaction:</u> alcoholic beverages, l-arginine, yohimbine<sup>2,31</sup></p>
<p><u>cyclobenzaprine</u> Amrix® Fexmid® Flexeril®</p>	<p><u>Skeletal muscle relaxant formulations</u> (Used as a muscle relaxant as part of treatment for skeletal muscle pain or injury)<sup>2</sup> -Capsule, extended release 1 x/day -Tablet, 3 x/day</p>	<p><u>Use in oncology population:</u> when pain is caused by muscle spasm<sup>49</sup> <u>Nutrition-related side effects:</u> anorexia, constipation, diarrhea, dyspepsia, flatulence, nausea, stomach cramps or pain, xerostomia<sup>2</sup> <u>MAJOR Interactions:</u> alcoholic beverages, gamma butyrolactone, gamma-hydroxybutyrate, procaine, St John's wort<sup>2,31</sup></p>

<p><u>decadron</u></p>	<p><u>Steroid formulation</u>  <i>(Used with treatment of adrenal gland insufficiency, severe inflammation states such as severe asthma or allergies, rheumatoid arthritis, ulcerative colitis, SLE, MS, eye &amp; skin conditions)</i><sup>2</sup>          -Tablets          -Injection, I.M. or I.V.</p> <p><u>For cerebral edema:</u> I.M., q 6 hrs, then tapered</p> <p><u>For palliative care of recurrent/inoperable brain tumors:</u>          -maintenance injection          -Tablets, q 2-3 x/day<sup>2</sup></p>	<p><u>Use in the oncology population</u>, to help with pain relief from nerve or spinal cord compression, liver or bone pain; by reducing inflammation &amp; swelling.<sup>34,45</sup> Used with palliative mgt of leukemias &amp; lymphomas; cerebral edema with primary or mets brain tumor; craniotomy.<sup>2</sup> <i>(Used in the emergency mgt of elevated intracranial pressure, epidural spinal cord compression)</i><sup>49</sup></p> <p><u>Nutrition-related side effects:</u> appetite changes, diarrhea, dyspepsia, nausea, pharyngitis, vomiting, weight changes<sup>2</sup></p> <p><u>MAJOR Interactions:</u> grapefruit*, lily-of-the-valley, St John's wort, tansy ragwort.<sup>31</sup></p> <p>*<u>Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup></p> <p><u>Special Alerts:</u> <u>Calcium</u>, decreases absorption, increases excretion<sup>2</sup>; <u>Diabetes</u>, hyperglycemia, closely monitor<sup>2</sup>; <u>Potassium</u>, lowers serum levels<sup>2</sup></p>
<p><u>desipramine</u>          Norpramin®</p>	<p><u>Antidepressant formulations</u>  <i>(Used with depression, postherpetic neuralgia, diabetic neuropathy, low back pain)</i><sup>2</sup>          -Tablet, 1 x/day</p>	<p><u>Use in oncology population:</u> to help relieve nerve pain (tingling &amp; burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment<sup>34,45,49</sup></p> <p><u>Nutrition-related side effects:</u> appetite changes, bloating, constipation, mouth swelling or inflammation, nausea, stomach cramps or pain, weight changes, xerostomia<sup>2</sup></p> <p><u>MAJOR Interactions:</u> 5-HTP, alcoholic beverages, arsenic, butanediol, cannabis (marijuana), cesium, country mallow, ephedra, ergot, gamma butyrolactone, gamma-hydroxybutyrate, gotu kola, Hawaiian baby woodrose, henbane, hydrazine sulfate, Jamaican dogwood, kava, l-tryphophan, lithium, marijuana, marsh tea, melatonin, motherwort, SAME, scopolia, St John's wort, sweet bay, valerian, wild lettuce.<sup>31</sup></p> <p><u>Special Alert:</u> <u>Diabetes</u>, closely monitor<sup>2</sup></p> <p><u>Nutrition-related withdrawal symptoms:</u> nausea<sup>32</sup></p>
<p><u>dexamethasone</u>          Dexamethasone Inten-sol®          Dexpak® Jr Taperpak®</p>	<p><u>Steroid formulations</u>  <i>(Used to treat allergic disorders, skin conditions, ulcerative colitis, arthritis, SLE, psoriasis, or respiratory disorders)</i><sup>2</sup>          -Tablet          -Oral solution          -I.V., I.M.          Frequency variable</p>	<p><u>Use in oncology population:</u> with cerebral edema, adrenal insufficiency, chemo-related nausea/vomiting, multiple myeloma.<sup>36</sup></p> <p><u>Nutrition-related side effects:</u> bloating, nausea, stomach pain, vomiting<sup>2</sup></p> <p><u>MAJOR Interactions:</u> alcoholic beverages, grapefruit*, lily-of-the-valley, St John's wort, tansy ragwort.<sup>31</sup></p> <p>*<u>Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup></p> <p><u>To prevent stomach upset:</u> Take with food or milk.<sup>32</sup></p> <p><u>Special Alert:</u> <u>Diabetic meds</u> (insulin or oral), closely monitor<sup>2</sup></p>

		<u>Nutrition-related withdrawal symptoms</u> : anorexia, dyspepsia, vomiting, weight loss <sup>32</sup>
<u>dextroamphetamine</u> Dexedrine <sup>®</sup> Dexedrine <sup>®</sup> Spanules Dextrostat <sup>®</sup> Liquadd <sup>®</sup> ProCentra <sup>®</sup>	<u>CNS stimulant formulations</u> <i>(Used with attention-deficit hyperactivity disorder, narcolepsy)</i> <sup>2</sup> -Tablet, q 3-4 hrs, 1-2 x/day -Capsule, extended-release, 1-2 x/day -Solution liquid	<u>Use in oncology population</u> : to enhance the effect of the opioid; reduces the opioid dose. <sup>51</sup> <u>Nutrition-related side effects</u> : anorexia, constipation, diarrhea, dysgeusia (unpleasant), dyspepsia, flatulence, weight loss, xerostomia <sup>2</sup> <u>MAJOR Interactions</u> : butanediol, cola nut, country mallow, ephedra, gamma butyrolactone, gamma-hydroxybutyrate, glutamic acid (l-glutamine), green tea, guarana, Indian snakeroot, mate, oolong tea, peyote, pu-erh tea, tiratricol. <sup>31,32</sup> <u>Special Alert</u> : <u>Fruit juices containing ascorbic acid/vitamin-C</u> <sup>2</sup> <u>Nutrition-related withdrawal symptoms</u> : nausea, stomach cramps or pain, vomiting <sup>2</sup>
<u>dextromethorphan (DM)</u> Babee Cof <sup>®</sup> Benylin <sup>®</sup> Buckley's <sup>®</sup> Creo-Terpin <sup>®</sup> Creomulsion <sup>®</sup> Dexalone <sup>®</sup> Diabetuss <sup>®</sup> Pediaccare <sup>®</sup> Pertussin <sup>®</sup> ES Silphen <sup>®</sup> DM St. Joseph <sup>®</sup> Tylenol <sup>®</sup> Simply Cough Vicks <sup>®</sup> Formula 44 Zicam <sup>®</sup> Cough	<u>Antitussive formulations</u> <i>(Used to relieve coughs due to colds or flu)</i> <sup>2</sup> -Capsule, liquid-filled -Tablet, chewable, q 4-12 hrs -Elixir -Liquid -Strip, dissolving -Solution -Syrup, q 6-8 hrs -Suspension -Suspension, extended-release q 12 hrs -Lozenge, q 2-4 hrs	<u>Use in oncology population</u> : as a cough suppressant with no analgesic or narcotic properties and fewer GI side effects <u>Nutrition-related side effects</u> : constipation, nausea, stomach pain, vomiting <sup>32</sup> <u>MAJOR Interactions</u> : alcoholic beverages, <u>grapefruit*</u> , St John's wort <sup>2,32</sup> * <u>Grapefruit Interaction</u> : Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i> , L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos <sup>27,28,29</sup> <u>Special Alerts</u> : <u>Diabetes</u> , product may contain sugar <sup>2</sup> ; <u>Phenylketonuria (PKU)</u> , chewable tablets may contain aspartame, a source of phenylalanine <sup>32</sup>
<u>doxepin</u> Adapin <sup>®</sup> Silenor <sup>®</sup> Sinequan <sup>®</sup>	<u>Antidepressant formulations</u> <i>(Used with depression, insomnia)</i> <sup>2, 49</sup> -Capsule, 3 x/day -Tablet, 3 x/day -Concentrate (liquid), oral, 3 x/day  <u>Concentrate (liquid)</u> : Use the dropper to measure. Dilute with 4 oz of water, milk, orange, grapefruit, tomato pineapple or prune juice. Drink immediately. <i>Do not mix</i>	<u>Use in oncology population</u> : to help relieve nerve pain (tingling & burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment <sup>34,45,49</sup> <u>Nutrition-related side effects</u> : appetite changes, constipation, dysgeusia, nausea, vomiting, weight changes, xerostomia <sup>2</sup> <u>MAJOR Interactions</u> : 5-HTP, alcoholic beverages, arsenic, butanediol, cannabis (marijuana), cesium, country mallow, ephedra, ergot, gamma butyrolactone, gamma-hydroxybutyrate, gotu kola, Hawaiian baby woodrose, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, lithium, marijuana, marsh tea, melatonin, motherwort, SAME, scopolia, St John's wort, sweet bay, valerian, wild

	<p>with carbonated beverages.<sup>32</sup></p> <p>The dose will be different for each individual</p>	<p>lettuce<sup>2,31</sup></p> <p><u>Special Alert: Diabetic med-tolazamide (Tolinase), closely monitor</u><sup>2</sup></p> <p><u>Nutrition-related withdrawal symptoms:</u> nausea<sup>2</sup></p>
<p>duloxetine Cymbalta<sup>®</sup></p>	<p><u>Antidepressant formulations</u> (Used to treat major depressive disorder, chronic musculoskeletal pain, diabetic neuropathy)<sup>2,49</sup></p> <p>-Capsule -Capsule, delayed-release, 1 x/day</p>	<p><u>Use in oncology population:</u> to help relieve nerve pain (tingling &amp; burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment<sup>34,45,49</sup></p> <p><u>Nutrition-related side effects:</u> anorexia, constipation, dyspepsia, nausea, pharyngitis, weight loss, xerostomia<sup>2</sup></p> <p><u>MAJOR Interactions:</u> alcoholic beverages, 5-HTP, ergot, Hawaiian baby woodrose, l-tryptophan, lithium, SAME, St John's wort, thuja.<sup>2,31</sup></p> <p><u>Special Alert: Diabetes, closely monitor</u><sup>2</sup></p> <p><u>Nutrition-related withdrawal symptoms:</u> diarrhea, nausea, vomiting<sup>2, 32</sup></p>
<p>escitalopram Lexapro<sup>®</sup></p>	<p><u>Antidepressant formulations</u> (Used to treat anxiety and major depressive disorder)<sup>2</sup></p> <p>-Tablet, 1 x/day -Solution, oral liquid, 1 x/day</p>	<p><u>Use in oncology population:</u> to help relieve nerve pain (tingling &amp; burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment<sup>34,45,49</sup></p> <p><u>Nutrition-related side effects:</u> constipation, diarrhea, dyspepsia, flatulence, stomach pain, xerostomia<sup>2</sup></p> <p><u>MAJOR Interactions:</u> alcoholic beverages, 5-HTP, ergot, ginkgo, Hawaiian baby woodrose, l-tryptophan, lithium, SAME, St John's wort, thuja.<sup>2,31</sup></p> <p><u>Nutrition-related withdrawal symptoms:</u> nausea<sup>2</sup></p>
<p>fluvoxamine Luvox<sup>®</sup> Luvox<sup>®</sup> CR</p>	<p><u>Antidepressant formulations</u> (Used with depression)<sup>2,49</sup></p> <p>-Tablet, 1 x/day -Capsule, extended-release, 1 x/day</p>	<p><u>Use in oncology population:</u> to help relieve nerve pain (tingling &amp; burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment<sup>34,45,49</sup></p> <p><u>Nutrition-related side effects:</u> appetite changes, constipation, dysgeusia, stomach pain, weight changes<sup>2</sup></p> <p><u>MAJOR Interactions:</u> alcoholic beverages, 5-HTP, ergot, ginkgo, Hawaiian baby woodrose, l-tryptophan, lithium, SAME, St John's wort, thuja.<sup>2,31</sup></p> <p><u>Nutrition-related withdrawal symptoms:</u> dizziness/nausea<sup>32</sup></p>
<p>fluoxetine Prozac<sup>®</sup> Prozac<sup>®</sup> Weekly Rapiflux<sup>®</sup> Sarafem<sup>®</sup> Selfemra<sup>®</sup></p>	<p><u>Antidepressant formulations</u> (Used to treat social anxiety disorder and obsessive-compulsive disorders)<sup>2</sup></p> <p>-Capsule, delayed release, 1 x/day -Tablet, 1 x/day</p>	<p><u>Use in oncology population:</u> to help relieve nerve pain (tingling &amp; burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment<sup>34,45,49</sup></p> <p><u>Nutrition-related side effects:</u> appetite loss, constipation, dysgeusia, dyspepsia, stomach pain, weight changes<sup>2</sup></p> <p><u>MAJOR Interactions:</u> alcoholic beverages, 5-HTP, ergot, ginkgo, Hawaiian baby woodrose, l-tryptophan, lithium, SAME, St John's wort, thuja.<sup>2,31</sup></p> <p><u>Nutrition-related withdrawal symptoms:</u> dizziness/nausea<sup>32</sup></p>

<p><u>gabapentin</u> Gabaron™ Neurontin®</p>	<p><u>Anticonvulsant formulation</u> <i>(Used to treat some types of seizures and manage postherpetic neuralgia, and diabetic neuropathy)</i><sup>2</sup> -Capsule -Tablet -Solution, oral liquid</p> <p>The dose is different for each individual.<sup>2</sup></p>	<p><u>Use in oncology population:</u> to control burning &amp; tingling pain; nerve damage pain<sup>34,36</sup> <u>Nutrition-related side effects:</u> pharyngitis, flu-like symptoms<sup>2</sup> <u>MAJOR Interactions:</u> gamma butyrolactone, gamma-hydroxybutyrate, ginkgo, thuja<sup>2,31</sup> <u>Nutrition-related withdrawal symptoms:</u> nausea<sup>32</sup></p>
<p><u>glycopyrrolate</u> Robinul® Robinul® Forte Cuvposa®</p>	<p><u>Anticholinergic formulations</u> <i>(Used to reduce secretions in the mouth, throat, airway, and stomach before surgery)</i><sup>2</sup> -Tablet, 3 x/day -Solution, oral, 3 x/day</p>	<p><u>Use in oncology population:</u> with the management of respiratory secretions at the end of life <u>Nutrition-related side effects:</u> constipation, dysgeusia, flatulence, pharyngitis, stomach pain, thirst, vomiting, xerostomia<sup>2</sup> <u>MAJOR Interactions:</u> henbane, scopolia<sup>31</sup> <u>Special Alert:</u> Potassium, oral supplement<sup>2</sup></p>
<p><u>ibandronate</u> Boniva®</p>	<p><u>Bisphosphonate formulation</u> <i>(Used to treat and prevent osteoporosis)</i><sup>2</sup> -Injection q 3 months</p>	<p><u>Use in oncology population:</u> to help relieve the pain of cancer when cancer has bone mets (breast or prostate cancer, or multiple myeloma) and hypercalcemia.<sup>32,38,45, 49</sup> <u>Nutrition-related side effects:</u> anorexia, cheilosis, constipation, diarrhea, dysgeusia, dyspepsia, dysphagia, nausea, pharyngitis, polydipsia, stomach cramps or pain, stomatitis, vomiting, weight changes, xerostomia<sup>2,32,41</sup> <u>Special Alert:</u> Diet, well-balanced, not excessive in calcium or vitamin D<sup>32,41</sup>; <u>Hydration,</u> adequate fluid intake &amp; urine output of 2 L/day<sup>41</sup>; <u>Vitamin D supplements,</u> avoid<sup>41</sup>; <u>Calcium supplements,</u> avoid<sup>41</sup></p>
<p><u>imipramine</u> Tofranil® Tofranil-PM®</p>	<p><u>Antidepressant formulations</u> <i>(Used to treat symptoms of depression)</i><sup>2</sup> -Capsules, 1 x/day -Tablet, 1 x/day</p>	<p><u>Use in oncology population:</u> to help relieve nerve pain (tingling &amp; burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment<sup>34,45,49</sup> <u>Nutrition-related side effects:</u> appetite changes, constipation, diarrhea, dysgeusia, dyspepsia, nausea, polydipsia, polyphagia, stomach cramps, weight changes, xerostomia<sup>2</sup> <u>MAJOR Interactions:</u> alcoholic beverages, 5-HTP, arsenic, cannabis (marijuana), cesium, country mallow, ephedra, ergot, grapefruit*, Hawaiian baby woodrose, henbane, l-tryptophan, lithium, SAME, scopolia, St John's wort.<sup>2,31</sup> <u>*Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup> <u>Special Alert:</u> Diabetes, closely monitor<sup>2</sup></p>

		<u>Nutrition-related withdrawal symptoms:</u> nausea <sup>2</sup>
<u>lacosamide</u> Vimpat <sup>®</sup>	<u>Anticonvulsant formulations</u> (Used to treat partial-onset seizures in epilepsy) <sup>2</sup> -Tablet, film-coated, 2 x/day -Solution	<u>Use in oncology population:</u> to control burning & tingling pain; nerve damage pain <sup>34,36</sup> <u>Nutrition-related side effects:</u> anorexia, diarrhea, dyspepsia, nausea, pharyngitis, stomach pain, stomatitis, vomiting, xerostomia <sup>2</sup> <u>MAJOR Interactions:</u> alcoholic beverages <sup>2</sup>
<u>lamotrigine</u> Lamictal <sup>®</sup> Lamictal <sup>®</sup> CD Lamictal <sup>®</sup> XR	<u>Anticonvulsant formulations</u> (Used alone or with other meds to treat seizures; and delay mood episodes in bipolar disorder) <sup>2</sup> -Tablet -Tablet, chewable -Tablet, disintegrating -Tablet, Extended Release  The dose is different for each individual. <sup>2</sup>	<u>Use in oncology population:</u> to control burning & tingling pain; nerve damage pain <sup>34,36</sup> <u>Nutrition-related side effects:</u> constipation, diarrhea, dyspepsia, nausea, pharyngitis, stomach pains, stomatitis, vomiting <sup>2</sup> <u>MAJOR Interactions:</u> gamma butyrolactone, gamma-hydroxybutyrate, ginkgo, thuja. <sup>2,31</sup>
<u>lidocaine</u> Lidoderm <sup>®</sup> Patch	<u>Local anesthetic formulation</u> (Used for local anesthesia, and peripheral nerve block) <sup>2</sup> -Solution, I.V infusion, bolus 15–30 min <sup>47</sup> -Skin patch (up to 12 hrs within a 24-hr period)	<u>Use in oncology population:</u> for neuropathic pain; burning, sensitive, deep, sharp, stabbing pain, pins & needles. <sup>47</sup> <u>Nutrition-related side effects:</u> dysgeusia (metallic taste), nausea, vomiting. <sup>2,46</sup> <u>MAJOR Interactions:</u> fever bark, grapefruit*, St John's wort, thuja. <sup>31</sup> <u>*Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i> , L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos <sup>27,28,29</sup>
<u>maprotiline</u> Ludomil <sup>®</sup>	<u>Antidepressant formulations</u> (Used to relieve mental depression, including anxiety; and chronic neurogenic pain) <sup>2</sup> -Tablet, 1-3 x/day	<u>Use in oncology population:</u> to help relieve nerve pain (tingling & burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment <sup>34,45,49</sup> <u>Nutrition-related side effects:</u> constipation (severe), nausea, pharyngitis, vomiting, weight loss, xerostomia <sup>2</sup> <u>MAJOR Interactions:</u> alcoholic beverages, 5-HTP, ergot, Hawaiian baby woodrose, l-tryptophan, lithium, SAME, St John's wort. <sup>2,31</sup>



<p><u>metaxalone</u><sup>38</sup> Skelaxin<sup>®</sup></p>	<p><u>Muscle relaxant formulation</u> (Used in the treatment of skeletal muscle pain or injury)<sup>2</sup> -Tablet, 3-4 x/day</p>	<p><u>Use in oncology population:</u> when pain is caused by muscle spasm<sup>49</sup> <u>Nutrition-related side effects:</u> anorexia, diarrhea, dyspepsia, nausea, pharyngitis, stomach cramps or pain, stomatitis, vomiting<sup>2</sup> <u>MAJOR Interactions:</u> alcoholic beverages, gamma butyrolactone, gamma-hydroxybutyrate, procaine<sup>2,31</sup></p>
<p><u>methocarbamol</u> Robaxin<sup>®</sup> Robaxin<sup>®</sup>-750</p>	<p><u>Muscle relaxant formulation</u> (Used as a muscle relaxant as part of treatment for skeletal muscle pain or injury)<sup>2</sup> -Tablet, 4 x/day</p>	<p><u>Use in oncology population:</u> when pain is caused by muscle spasm<sup>49</sup> <u>Nutrition-related side effects:</u> anorexia, diarrhea, dyspepsia, dysphagia, nausea, pharyngitis, stomach pain, stomatitis<sup>2</sup> <u>MAJOR Interactions:</u> alcoholic beverages, gamma butyrolactone, gamma-hydroxybutyrate, procaine<sup>2,31</sup></p>
<p><u>methylphenidate</u> Concerta<sup>®</sup> Metadate<sup>®</sup> CD Metadate<sup>®</sup> ER Methylin<sup>®</sup> Methylin<sup>®</sup> ER Ritalin<sup>®</sup> Ritalin<sup>®</sup> LA Ritalin<sup>®</sup>-SR</p>	<p><u>CNS stimulant formulations</u> (Used with attention-deficit/hyperactivity disorder and narcolepsy) -Tablet, 2-3 x/day -Tablet, extended-release, 1 x/day -Tablet, chewable, 2-3 x/day -Solution, oral -Capsule, extended-release, 1 x/day</p>	<p><u>Use in oncology population:</u> to enhance the effect of the opioid and the opioid dose can be reduced.<sup>51</sup> <u>Nutrition-related side effects:</u> anorexia, diarrhea, dyspepsia, nausea, stomach pain, vomiting, xerostomia<sup>2,32</sup> <u>MAJOR Interactions:</u> country mallow, ephedra, Indian snakeroot, peyote, thuja, tiratricol<sup>31</sup> <u>Special Alert:</u> <u>Phenylketonuria (PKU):</u> Avoid using the chewable tablets.<sup>32</sup></p>
<p><u>milnacipran</u> Savella<sup>®</sup></p>	<p><u>Antidepressant formulation</u> (Used to treat fibromyalgia)<sup>2</sup> -Tablet, 1-2 x/day</p>	<p><u>Use in oncology population:</u> to help relieve nerve pain (tingling &amp; burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment<sup>34,45,49</sup> <u>Nutrition-related side effects:</u> constipation, nausea, stomach pain, vomiting, weight loss, xerostomia <u>To reduce stomach upset:</u> Take with food. <u>MAJOR Interaction:</u> alcoholic beverages, tryptophan or 5-HTP<sup>2,32</sup> <u>Special Alert:</u> <u>Tartrazine sensitivity,</u> contains tartrazine<sup>2</sup> <u>Nutrition-related withdrawal symptoms:</u> dizziness/nausea<sup>32</sup></p>
<p><u>mirtazapine</u> Remeron<sup>®</sup> Remeron<sup>®</sup> SolTab Remeron RD<sup>(Canada)</sup></p>	<p><u>Antidepressant formulations</u> (Used to treat depression)<sup>2,49</sup> -Tablet, 1 x/day -Tablet, disintegrating, 1 x/day</p>	<p><u>Use in oncology population:</u> to help relieve nerve pain (tingling &amp; burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment<sup>34,45,49</sup> <u>Nutrition-related side effects:</u> appetite increase, constipation, nausea, pharyngitis, stomach pain, stomatitis, vomiting, weight gain, xerostomia<sup>2</sup> <u>MAJOR Interactions:</u> alcoholic beverages, 5-HTP, ergot, grapefruit*, Hawaiian baby woodrose, l-tryptophan, lithium, SAME, St John's wort<sup>2,31</sup></p>

		<p><u>*Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos <sup>27,28,29</sup></p> <p><u>Special Alert:</u> <u>Phenylketonuria</u> (PKU), oral disintegrating tablet contains aspartame <sup>32</sup></p>
<p><u>modafinil</u> Provigil<sup>®</sup> Alertec</p>	<p><u>CNS stimulant formulation</u> (Used with narcolepsy, work shift sleep disorder, obstructive sleep apnea)<sup>2</sup> -Tablet, 1 x/day</p>	<p><u>Use in oncology population:</u> to enhance the effect of the opioid and the opioid dose can be reduced. <sup>51</sup></p> <p><u>Nutrition-related side effects:</u> anorexia, constipation, diarrhea, dyspepsia, nausea, pharyngitis, polydipsia, stomatitis, vomiting, xerostomia <sup>2</sup></p> <p><u>MAJOR Interactions:</u> alcoholic beverages, country mallow, ephedra, <u>grapefruit*</u>, Indian snakeroot, peyote, St John's wort, tansy ragwort, tiratricol. <sup>2,31</sup></p> <p><u>*Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos <sup>27,28,29</sup></p>
<p><u>nabilone</u> Cesamet<sup>®</sup></p>	<p><u>Cannabinoid formulation</u> (Used with refractory chemotherapy-induced nausea/vomiting)<sup>2,32</sup> -Capsule, 2-3 times/day during chemotherapy, effective for 48-72 hrs <sup>2</sup></p>	<p><u>Use in oncology population:</u> for refractory pain states <sup>36</sup></p> <p><u>Nutrition-related side effects:</u> appetite changes, nausea, xerostomia <sup>2,32</sup></p> <p><u>Interactions:</u> Alcoholic beverages <sup>32</sup></p>
<p><u>nortriptyline</u> Aventyl<sup>®</sup> Pamelor<sup>®</sup></p>	<p><u>Antidepressant formulations</u> (Used to treat depression, post-herpetic neuralgia) <sup>2,32,49</sup> -Capsules, 1-4 x/day -Solution, oral, 3-4 x/day</p>	<p><u>Use in oncology population:</u> to help relieve nerve pain (tingling &amp; burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment <sup>34,45,49</sup></p> <p><u>Nutrition-related side effects:</u> appetite changes, constipation, diarrhea, dysgeusia, dyspepsia, nausea, stomach cramps, weight changes, xerostomia <sup>2,32</sup></p> <p><u>MAJOR Interactions:</u> alcoholic beverages, 5-HTP, ergot, Hawaiian baby woodrose, henbane, l-tryptophan, lithium, SAMe, scopolia, St John's wort. <sup>2,31</sup></p> <p><u>Special Alert:</u> <u>Diabetic meds</u>, including chlorpropamide (Diabinese<sup>®</sup>), closely monitor <sup>2,32</sup></p> <p><u>Nutrition-related withdrawal symptoms:</u> nausea <sup>2,32</sup></p>
<p><u>octreotide</u> Sandostatin Sandostatin LAR Depot</p>	<p><u>Anticholinergic formulation</u> (Used to treat severe diarrhea in certain intestinal tumors, acromegaly, AIDS-related diarrhea, chemo-induced diarrhea, insulin-</p>	<p><u>Use in oncology population:</u> to treat the pain from bowel obstruction, from progressive GI &amp; genitourinary cancers <sup>36,45</sup></p> <p><u>Nutrition-related side effects:</u> anorexia, constipation, diarrhea, flatulence, nausea, pharyngitis, polyphagia, steatorrhea, stomach pain, vomiting, weight</p>

	<p><i>producing tumors of the pancreas</i>)<sup>2</sup></p> <ul style="list-style-type: none"> <li>-Powder for suspension</li> <li>-Powder of solution</li> <li>-<u>Solution, long-acting</u>, I.M. (intestinal tumor) q 4 weeks x 2 mos</li> <li>-<u>Solution, short acting</u>, sub-Q (intestinal tumor) q 2-3 x/day</li> </ul>	<p>gain, xerostomia<sup>2</sup></p> <p><u>Special Alert: Diabetes</u>, closely monitor<sup>2</sup></p>
<p><u>orphenadrine</u> Invagesic<sup>®</sup> Norflex<sup>®</sup></p>	<p><u>Muscle relaxant formulations</u> (Used to help treat skeletal muscle pain or injury)<sup>2</sup></p> <ul style="list-style-type: none"> <li>-Tablet, 3 x/day</li> <li>-Tablet, extended-release 2 x/day</li> </ul>	<p><u>Use in oncology population:</u> when pain is caused by muscle spasm<sup>49</sup></p> <p><u>Nutrition-related side effects:</u> constipation, diarrhea, nausea, stomach pain, stomatitis, vomiting, xerostomia<sup>2</sup></p> <p><u>MAJOR Interactions:</u> alcoholic beverages<sup>2</sup>, gamma butyrolactone, gamma-hydroxybutyrate, procaine<sup>31</sup></p>
<p><u>oxcarbazepine</u> Trileptal<sup>®</sup></p>	<p><u>Anticonvulsant formulations</u> (Used to treat partial seizures)<sup>2</sup></p> <ul style="list-style-type: none"> <li>-Tablet, 2 x/day</li> <li>-Suspension oral liquid, 2 x/day</li> </ul>	<p><u>Use in oncology population:</u> To control burning &amp; tingling pain; nerve damage pain<sup>34,36</sup></p> <p><u>Nutrition-related side effects:</u> constipation, dysgeusia, dyspepsia, nausea, stomach pain, stomatitis, vomiting, xerostomia<sup>2</sup></p> <p><u>MAJOR Interactions:</u> alcoholic beverages<sup>2</sup>, gamma butyrolactone, gamma-hydroxybutyrate, ginkgo<sup>2</sup>, tansy ragwort, thuja.<sup>31</sup></p>
<p><u>pamidronate</u> Other names: ADP Sodium AHPPrBP Sodium Aredia<sup>®</sup></p>	<p><u>Bisphosphonate formulations</u> (Used to treat Paget's disease of bone; used to treat bone damage from breast or bone marrow cancer)<sup>2</sup></p> <ul style="list-style-type: none"> <li>-Powder for solution</li> <li>-Solution, I.V.</li> </ul> <p>For hypercalcemia: I.V. 2-24 hrs<sup>2</sup></p> <p>For bone mets: I.V. 2-4 hrs, then repeat q 3-4 weeks or 1x /month</p>	<p><u>Use in oncology population:</u> to help relieve the pain of cancer when cancer has bone mets (breast or prostate cancer, or multiple myeloma); treats hypercalcemia of malignancy.<sup>32,38,45,49</sup></p> <p><u>Nutrition-related side effects:</u> anorexia, cheilosis, constipation, diarrhea, dysgeusia, dyspepsia, dysphagia, nausea, pharyngitis, polydipsia, stomach cramps or pain, stomatitis, vomiting, weight changes, xerostomia<sup>2,32,41</sup></p> <p><u>Special Alert: Diet</u>, well-balanced, not excessive in calcium or vitamin D,<sup>32,41</sup>; <u>Hydration</u>, adequate fluid intake &amp; urine output of 2 L/day<sup>41</sup>; <u>Vitamin D supplements</u>, avoid<sup>41</sup>; <u>Calcium supplements</u>, avoid<sup>41</sup></p>
<p><u>paroxetine</u> Paxil<sup>®</sup> Paxil<sup>®</sup>-CR Pexeva<sup>®</sup></p>	<p><u>Antidepressant formulations</u> (Used to treat depression, obsessive-compulsive disorder, anxiety disorders, post-traumatic stress disorder, and premenstrual dysphoric disorder)<sup>2,3,49</sup></p> <ul style="list-style-type: none"> <li>-Tablet, 1 x/day</li> <li>-Tablet, extended-release, 1 x /day</li> <li>-Oral suspension, 1 x/day</li> </ul>	<p><u>Use in oncology population:</u> to help relieve nerve pain (tingling &amp; burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment<sup>34,45,49</sup></p> <p><u>Nutrition-related side effects:</u> appetite loss, constipation, diarrhea, dysgeusia, dyspepsia, flatulence, nausea, stomach pain, vomiting, weight changes, xerostomia<sup>2, 32</sup></p> <p><u>To reduce stomach upset:</u> Take with food.</p> <p><u>MAJOR Interactions:</u> 5-HTP, ergot, ginkgo, Hawaiian baby woodrose, l-tryptophan, lithium, SAME, St John's wort, thuja.<sup>2, 31,32</sup></p>

		<p><u>Nutrition-related withdrawal symptoms:</u> diarrhea, nausea, vomiting<sup>2,32</sup></p>
<p><u>phenytoin</u> Dilantin® Dilantin® Infatabs® Dilantin® Kapseals® Dilantin-125® Phenytek® Dilantin-30 (Canada)</p>	<p><u>Anticonvulsant formulations</u> (Used to control seizures)<sup>2</sup> -Capsule -Capsule, extended-release, 1-4 x/day -Tablet, chewable, 2-3 x/day -Suspension, oral, 3 x/day</p>	<p><u>Use in oncology population:</u> To control burning &amp; tingling pain; nerve damage pain<sup>34,36</sup> <u>Nutrition-related side effects:</u> anorexia, constipation, nausea, pharyngitis, stomach pain, vomiting, weight loss.<sup>2,32</sup> <u>To reduce stomach upset:</u> Take with food or milk.<sup>41</sup> <u>MAJOR Interactions:</u> alcoholic beverages, butanediol, chaparral, comfrey, folic acid<sup>2</sup>, gamma butyrolactone, gamma-hydroxybutyrate, ginkgo<sup>2</sup>, St John's wort, tansy ragwort, thuja<sup>2,31,41</sup> <u>Special Alerts:</u> <u>Enteral nutrition,</u> give medicine 2 hrs before or after a feeding<sup>2,32,41</sup>; <u>Calcium supplement,</u> if needed, give separately by 2 hrs<sup>41</sup>; <u>Thiamine supplement,</u> if needed, give separately by 2 hrs<sup>41</sup>; <u>Vitamin D supplement,</u> if needed, give separately by 2 hrs.<sup>41</sup>; <u>Diabetic meds,</u> including tolbutamide, closely monitor<sup>41</sup></p>
<p><u>prednisone</u> Deltasone Liquid Pred Meticorten Orasone Prednisone Intensol® Prednicen-M Prednicot Sterapred® Sterapred® DS</p>	<p><u>Steroid formulations</u> (Used to treat allergic disorders, skin conditions, ulcerative colitis, arthritis, SLE, psoriasis, or respiratory disorders)<sup>2</sup> -Tablet -Solution, oral liquid solution -Solution, oral concentrated  <u>Oral concentrated solution:</u> Can be mixed with juice (<i>not grapefruit*</i>), other flavored liquids, or soft foods such as applesauce.<sup>32</sup></p>	<p><u>Use in oncology population:</u> for the managing pain (from the bronchial or lumbosacral plexopathy, frequently located in the low back, buttock, hip &amp; thigh) when added to opioids;<sup>49</sup> to help with pain relief from nerve or spinal cord compression, liver or bone pain, by reducing inflammation &amp; swelling.<sup>34,45</sup> <u>Nutrition-related side effects:</u> dyspepsia, nausea, pharyngitis, stomach pain, sudden weight gain, vomiting<sup>2,32</sup> <u>To reduce stomach upset:</u> Take with food. Limit caffeine.<sup>41</sup> <u>MAJOR Interactions:</u> alcoholic beverages, <u>grapefruit*</u>, lily-of-the-valley, St John's wort.<sup>2,31</sup> <u>*Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup> <u>Special Alert:</u> <u>Diabetes,</u> closely monitor<sup>2,32,41</sup>; <u>Calcium,</u> may need to supplement<sup>32,41</sup>; <u>Vitamin D,</u> may need to supplement<sup>32,41</sup>; <u>Potassium,</u> may need to supplement.<sup>32,41</sup> <u>Nutrition-related withdrawal symptoms:</u> stomach upset, stomatitis, weight loss<sup>32</sup></p>
<p><u>pregabalin</u> Lyrica®</p>	<p><u>Anticonvulsant formulation</u> (Used to control seizures and to treat fibromyalgia; treat pain in diabetic neuropathy or herpes zoster (post-herpetic neuralgia)<sup>2</sup> -Capsule, 2-3 x/day</p>	<p><u>Use in oncology population:</u> To control burning &amp; tingling pain; nerve damage pain<sup>34,36</sup> <u>Nutrition-related side effects:</u> appetite increase, bloating, constipation, diarrhea, dysphagia, edema, flatulence, nausea, pharyngitis, stomatitis, vomiting, weight pain, xerostomia<sup>2,32</sup> <u>To reduce stomach upset:</u> Take on a full stomach.<sup>2</sup></p>

	-Solution, 2-3 x/day	<p><u>MAJOR Interactions:</u> Alcoholic beverages<sup>32</sup></p> <p><u>Special Alerts:</u> Diabetic meds- pioglitazone (Actos<sup>®</sup>, Duetact<sup>®</sup>), rosiglitazone (Avandia<sup>®</sup>, Avandaryl<sup>®</sup>, Avandamet<sup>®</sup>), closely monitor<sup>2,32</sup>; <u>Magnesium supplement</u>, take separately by 2 hrs.<sup>41</sup></p> <p><u>Nutrition-related withdrawal symptoms:</u> nausea, diarrhea<sup>2,32</sup></p>
<p><u>protriptyline</u> Vivactil<sup>®</sup></p>	<p><u>Antidepressant formulation</u> (Used to treat symptoms of depression)<sup>2,49</sup> -Tablet, 3-4 x/day</p>	<p><u>Use in oncology population:</u> to help relieve nerve pain (tingling &amp; burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment<sup>34,45,49</sup></p> <p><u>Nutrition-related side effects:</u> anorexia, constipation, diarrhea, dysgeusia, dyspepsia, nausea, stomach pain, vomiting, weight changes, xerostomia<sup>2,32</sup></p> <p><u>MAJOR Interactions:</u> 5-HTP, cannabis (marijuana)<sup>2</sup>, ergot, Hawaiian baby woodrose, hanbane, l-tryptophan, lithium, SAME, scopolia, St John's wort.<sup>31</sup></p> <p><u>Special Alert:</u> <u>Diabetes</u>, closely monitor<sup>2</sup></p> <p><u>Nutrition-related withdrawal symptom:</u> nausea<sup>32</sup></p>
<p><u>scopolamine</u> Transderm Scop<sup>®</sup> Transderm -V (Canada) <u>hyoscine butylbromide</u> (International)</p>	<p><u>Anticholinergic formulation</u> (Used to relieve nausea, vomiting, and dizziness with motion sickness, post-op recovery from anesthesia, treatment of parkinsonism, spastic muscle, IBS, diverticulitis)<sup>2,32</sup> -Patch, extended release (3 days)</p>	<p><u>Use in oncology population:</u> to help relieve pain from bowel obstruction, by reducing the secretion of body fluids, slows the GI tract, which reduces pressure &amp; pain on the bowel wall.<sup>2</sup></p> <p><u>Nutrition-related side effects:</u> xerostomia<sup>32</sup></p> <p><u>MAJOR Interactions:</u> alcoholic beverages<sup>32</sup></p> <p><u>Special Alerts:</u> Potassium chloride<sup>2</sup></p> <p><u>Nutrition-related withdrawal symptoms:</u> nausea, vomiting<sup>2</sup></p>
<p><u>sertraline</u> Zoloft<sup>®</sup></p>	<p><u>Antidepressant formulations</u> (Used to treat depression, obsessive-compulsive disorder, panic disorder, anxiety disorders, post-traumatic stress disorder, and premenstrual dysphoric disorder)<sup>2</sup> -Tablet, 1 x/day -Concentrate, oral liquid, 1 x/day</p> <p><u>Oral liquid concentrate:</u> Dilute by mixing with 4 oz of either: water, ginger ale, lemon or lime soda, lemonade, or orange juice. <i>Do not use any other liquids.</i></p>	<p><u>Use in oncology population:</u> to help relieve nerve pain (tingling &amp; burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment<sup>34,45,49</sup></p> <p><u>Nutrition-related side effects:</u> appetite changes, constipation, diarrhea, dyspepsia, flatulence, nausea, pharyngitis, stomach cramps, vomiting, weight changes, xerostomia<sup>2,32,41</sup></p> <p><u>MAJOR Interactions:</u> Alcoholic beverages<sup>32,41</sup>, 5-HTP, ergot, ginkgo<sup>2</sup>, grapefruit*, Hawaiian baby woodrose, l-tryptophan, lithium, SAME, St John's wort, thuja.<sup>2,31,41</sup></p> <p>*<u>Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup></p> <p><u>Special alerts:</u> <u>Diabetes</u>-oral meds, such as tolbutamide (Orinase)<sup>32</sup>; <u>latex sensitivity:</u> liquid concentrate dropper contains latex<sup>32</sup></p> <p><u>Nutrition-related withdrawal symptoms:</u> nausea<sup>2</sup></p>

<p>strontium-89 chloride Metastron® Quadramet®</p>	<p><u>Radiopharmaceutical</u> (Used to help relieve bone pain from some cancers, such as multiple myeloma)<sup>2,32</sup> -Injectable, I.V. -Solution</p>	<p><u>Use in oncology population:</u> to provide relief of bone pain by irradiating the cancerous bone areas.<sup>2, 38,45</sup> <u>Nutrition-related side effects:</u> diarrhea<sup>32</sup></p>
<p>tizanidine Zanaflex® Zanaflex® Capsule</p>	<p><u>Skeletal muscle relaxant formulations</u> (Used to temporarily relieve spasms and muscle cramping with MS, CVA, or spinal injury)<sup>2,32</sup> -Tablet q 6-8 hrs -Capsule q 6-8 hrs  <u>Maximum Dosage</u> 36 mg/24 hrs<sup>2</sup></p>	<p><u>Use in oncology population:</u> when pain is caused by muscle spasm<sup>49</sup> <u>Nutrition-related side effects:</u> anorexia, constipation, diarrhea, dyspepsia, dysphagia, nausea, pharyngitis, stomach pain, vomiting, weight loss, xerostomia<sup>2,32</sup>  <u>Interactions:</u> alcoholic beverages<sup>2,41</sup></p>
<p>topiramate Topamax® Topiragen</p>	<p><u>Anticonvulsant formulations</u> (Used to treat seizures and prevent migraine headaches)<sup>2</sup> -Tablet, 2 x/day -Capsule, 2 x/day  Drink 6 - 8 glasses of water daily to prevent kidney stone formation.<sup>32</sup></p>	<p><u>Use in oncology population:</u> To control burning &amp; tingling pain; nerve damage pain<sup>34,36</sup> <u>Nutrition-related side effects:</u> anorexia, constipation, diarrhea, dysgeusia, dyspepsia, dysphagia, edema, flatulence, nausea, pharyngitis, polydipsia, stomach pain, stomatitis, tongue swelling, weight loss, xerostomia.<sup>2,32,41</sup> <u>MAJOR Interactions:</u> alcoholic beverages, gamma butyrolactone, gamma-hydroxybutyrate, ginkgo<sup>2</sup>, iron<sup>32</sup>, St John's wort, thuja.<sup>31,41</sup> <u>Special Alerts:</u> <u>Ketogenic diet:</u> Avoid high fat, low carbohydrate diet, increases the risk of kidney stones<sup>32</sup>; <u>Diabetes:</u> oral meds-pioglitazone (Actos®),<sup>32</sup> metformin<sup>2</sup>; <u>Osteoporosis</u></p>
<p>trazodone Desyrel® Desyrel Dividose Oleptro</p>	<p><u>Antidepressant formulation</u> (Used to treat depression, treat depression, anxiety disorders, insomnia, and chronic pain)<sup>2</sup> -Tablet, divided doses -Tablet, extended-release, 1 x/day</p>	<p><u>Use in oncology population:</u> to help relieve nerve pain (tingling &amp; burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment<sup>34,45,49</sup> <u>Nutrition-related side effects:</u> anorexia, constipation, diarrhea, dysgeusia, (bad taste), nausea, stomach pain, vomiting, weight changes, xerostomia<sup>2</sup> <u>To reduce stomach upset:</u> Take the regular tablet with or immediately after a meal or light snack. Take the extended-release tablet at bedtime without food.<sup>2</sup> <u>MAJOR Interactions:</u> 5-HTP, alcoholic beverages, chaparral, comfrey, ergot, ginkgo, grapefruit*, Hawaiian baby woodrose, l-tryptophan, lithium, SAME, St John's wort<sup>2,31</sup> <u>*Grapefruit Interaction:</u> Avoid grapefruit juice, grapefruit segments, grapefruit extract, seville oranges (other names: sour orange, <i>Citrus aurantium</i>, L, bitter, bigarade used to make marmalade), pummelos (pomelos), and tangelos<sup>27,28,29</sup></p>

<p><u>trimipramine</u> Surmontil®</p>	<p><u>Antidepressant formulation</u> (Used to treat symptoms of depression) <sup>2</sup> -Tablet -Capsule, divided doses</p>	<p><u>Use in oncology population:</u> to help relieve nerve pain (tingling &amp; burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment <sup>34,45,49</sup> <u>Nutrition-related side effects:</u> anorexia, black tongue, constipation, diarrhea, dysgeusia (strange taste) dyspepsia, nausea, stomatitis, vomiting, weight gain, xerostomia <u>MAJOR Interactions:</u> 5-HTP, alcoholic beverages, arsenic, cannabis, cesium, country mallow, ephedra, ergot, Hawaiian baby woodrose, l-tryphophan, lithium, SAMe, scopolia, St John's wort <sup>2,31</sup> <u>Special Alert:</u> <u>Diabetes</u>, monitor closely <sup>2</sup> <u>Nutrition-related withdrawal symptoms:</u> nausea <sup>2</sup></p>
<p><u>valproic acid</u> valproate sodium divalproex sodium Depakene® Depacon Depakote® Depakote® ER Depakote® Sprinkle Stavzor</p>	<p><u>Anticonvulsant formulations</u> (Used to treat different types of seizure disorders) <sup>2</sup> -Capsule -Tablet, extended-release -Tablet-delayed release -Capsule sprinkle -Oral syrup</p>	<p><u>Use in oncology population:</u> To control burning &amp; tingling pain; nerve damage pain <sup>34,36</sup> <u>Nutrition-related side effects:</u> appetite changes, constipation, diarrhea, heartburn, pharyngitis, weight changes <u>To prevent stomach upset:</u> Take with food. <u>MAJOR Interactions:</u> alcoholic beverages, butanediol, gamma butyrolactone, gamma-hydroxybutyrate, gotu kola, hydrazine sulfate, Jamaican dogwood, kava, l-tryptophan, marijuana, marsh tea, melatonin, motherwort, St John's wort, sweet bay, thuja, valerian, wild lettuce <sup>31</sup> <u>Special Alert:</u> <u>Oral syrup</u>, do not mix into carbonated beverages; <u>Hydration</u>, drink plenty of water or other liquids while taking this medicine; <u>Urea cycle disorder:</u> monitor serum ammonia <sup>32</sup> ; <u>Calcium</u>, increase dietary intake, or use supplement <sup>41</sup> ; <u>Vitamin D</u>, increase dietary intake, or use supplement <sup>41</sup></p>
<p><u>venlafaxine</u> Effexor® Effexor® XR</p>	<p><u>Antidepressant formulations</u> (Used to treat major depressive disorder, anxiety disorder, panic disorder, and hot flashes) <sup>2,34,49</sup> -Tablet -Tablet, extended-release -Capsule, extended-release, 2-3 x/day</p>	<p><u>Use in oncology population:</u> to help relieve nerve pain (tingling &amp; burning pain) from a damaged nerve, caused by the tumor pressing on a nerve, or from cancer treatment <sup>34,45,49</sup> <u>Nutrition-related side effects:</u> anorexia, constipation, diarrhea, dysgeusia, dyspepsia, flatulence, nausea, stomach pain, vomiting, xerostomia <u>To prevent stomach upset:</u> Take tablet with food. <sup>41</sup> Take the extended-release capsule with food. Swallow the capsule whole with fluid. <sup>2</sup> <u>MAJOR Interactions:</u> alcoholic beverages, 5-HTP, ergot, ginkgo, Hawaiian baby woodrose, l-tryphophan, lithium, SAMe, St John's wort, thuja. <sup>2,31,41</sup> <u>Special Alert:</u> <u>Diabetes</u>, closely monitor <sup>41</sup> <u>Nutrition-related withdrawal symptoms:</u> anorexia, diarrhea, nausea, vomiting, xerostomia <sup>32</sup></p>

<p><u>zoledronic acid</u> Reclast® Zometa®</p>	<p><u>Bisphosphonate formulation</u></p> <p>(Used to prevent or treat osteoporosis in postmenopausal women or long-term use of steroids &gt; 12 months; increases bone mass in males with osteoporosis, treat Paget's disease, multiple myeloma, hypercalcemia of malignancy, or mets bone cancer)<sup>2,32,49</sup></p> <p>-Solution-injection over at least 15 minutes.</p> <p>Drink at least 2 glasses of fluids within a few hours before receiving this medicine<sup>32</sup></p>	<p><u>Use in oncology population:</u> to help relieve the pain of cancer when cancer has metastasized to the bone (breast or prostate cancer, or multiple myeloma).<sup>38,45</sup></p> <p><u>Nutrition-related side effects:</u> anorexia, cheilosis, constipation, diarrhea, dysgeusia, dyspepsia, dysphagia, nausea, pharyngitis, polydipsia, stomach cramps or pain, stomatitis, vomiting, weight changes, xerostomia<sup>2,32,41</sup></p> <p><u>Special Alert:</u> Diet, well-balanced, not excessive in calcium or vitamin D<sup>32,41</sup>;</p> <p><u>Hydration,</u> adequate fluid intake &amp; urine output of 2 L/day<sup>41</sup>; <u>Vitamin D supplements,</u> avoid<sup>41</sup>; <u>Calcium supplements,</u> avoid<sup>41</sup></p>
--	--	--

### Pain Medication References:

1. Pain PDQ® National Cancer Institute. Available at: <http://www.cancer.gov/cancertopics/pdq/supportivecare/pain/HealthProfessional> Last accessed 11/21/10.
2. From Drugs.com, <http://www.drugs.com> Data sources: Micromedex™ (updated 10/1/10), Cerner Multum™ [updated 10/20/10], Wolters Kluwer™ [updated 11/4/10] and others. Last accessed 11/21/10.
3. MedLine Plus Drugs. Prescription and over-the-counter medication information is from AHFS® Consumer Medication Information, by the American Society of Health-System Pharmacists (ASHP), Inc., Bethesda, Maryland; 2010 Available at: <http://www.nlm.nih.gov/medlineplus/druginformation.html> Last accessed 11/21/10.
4. New Ofirmev. Cadence Pharmaceuticals, Inc. Available at: <http://www.ofirmev.com> Last accessed: 1/19/2011.
5. American Chronic Pain Association Consumer Guide to Pain Medication & Treatment, 2011 Edition. Available at: [http://www.theacpa.org/uploads/ACPA\\_Consumer\\_Guide\\_2011%20final.pdf](http://www.theacpa.org/uploads/ACPA_Consumer_Guide_2011%20final.pdf) Last accessed: 1/22/11.
6. Tylenol with Codeine No. 3 From Drugs.com, content provided by: Data sources include Micromedex™ [Updated 25 Nov 2010], Cerner Multum™ [Updated 20 Dec 2010], Wolters Kluwer™ [Updated 4 Dec 2010] Available at: <http://www.drugs.com/cons/tylenol-with-codeine-no-3.html> Last accessed: 1/22/11.
7. Caldolor Full Prescribing Information. Available at: [http://caldolor.com/pdfs/Caldolor\\_Full\\_Prescribing\\_Information.pdf](http://caldolor.com/pdfs/Caldolor_Full_Prescribing_Information.pdf) Last accessed: 1/22/11.
8. Diflunisal Last reviewed: September 1, 2008. Content provided by AHFS® Consumer Medication Information. 2011. The American Society of Health-System Pharmacists, Inc. Available at: <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0000823> Last accessed: 1/22/11.
9. Choline Salicylate oral solution. St. John Providence Health System 2001 website. Available at: <http://www.stjohnprovidence.org/HealthInfoLib/swArticle.aspx?26.2622> Last accessed: 1/22/11.



10. Ibuprofen dosage. Available at: <http://www.drugs.com/dosage/ibuprofen.html> Last accessed: 1/23/11.
11. Naprosyn dosage. Available at: <http://www.drugs.com/dosage/naproxen.html> Last accessed: 1/23/11.
12. Naprosyn. Available at: <http://www.drugs.com/pro/naprosyn.html> Last accessed: 1/23/11.
13. Morphine. Available at: <http://www.drugs.com/cons/morphine.html> Last accessed: 1/23/11.
14. Pain Control. American Cancer Society website. Last Medical Review: 10/25/2010 Last Revised: 10/25/2010  
Available at:  
<http://www.cancer.org/Treatment/TreatmentsandSideEffects/PhysicalSideEffects/Pain/PainDiary/pain-control-opioid-pain-medicines> Last accessed: 1/25/11.
15. Nucynta<sup>®</sup>. Medical News Today website. Available at: <http://www.medicalnewstoday.com/articles/155091.php>  
Last accessed: 1/26/11.
16. Exalgo<sup>™</sup> Medication Guide. Available at: <http://www.fda.gov/downloads/Drugs/DrugSafety/UCM204267.pdf>  
Last accessed: 1/26/11.
17. OxyContin package insert. Available at: <http://www.purduepharma.com/pi/prescription/oxycontin.pdf>  
Last accessed: 1/26/11.
18. OxyIR package insert. February 12, 2007. Available at: <http://www.purduepharma.com/pi/Prescription/OxyIR.pdf>  
Last accessed: 1/26/11.
19. Roxicodone Available at: <http://www.drugs.com/pro/roxicodone.html> Last accessed: 1/26/11.
20. Roxanol T Available at: <http://www.drugs.com/cons/roxanol-t.html> Last accessed: 1/26/11
21. Endocet Available at: <http://www.drugs.com/endocet.html> Last accessed: 1/26/11.
22. Oxycodone and aspirin. Available at: <http://www.drugs.com/pro/oxycodone-aspirin.html> Last accessed: 1/26/11.
23. Opana Available at: [http://www.endo.com/pdf/Opana\\_IR\\_PI.pdf](http://www.endo.com/pdf/Opana_IR_PI.pdf) Last accessed: 1/26/11.
24. Levo-Dromoran Available at: <http://www.drugs.com/pro/levo-dromoran.html> Last accessed: 1/26/11.
25. Tramadol Available at: <http://www.drugs.com/pro/rybix-odt.html> Last accessed: 1/26/11.
26. Nucynta<sup>®</sup> Available at: <http://www.drugs.com/pro/nucynta.html> Last accessed: 1/26/11.
27. Grapefruit-Drug Interactions. Dean Elbe, B.SC (Pharm) BCPP. Available at:  
<http://powernetdesign.com/grapefruit> Last accessed: 1/26/11.
28. Sour Orange. Available at: [http://www.hort.purdue.edu/newcrop/morton/sour\\_orange.html](http://www.hort.purdue.edu/newcrop/morton/sour_orange.html)  
Last accessed: 1/26/11.

29. Trangsrud AJ. "New Concerns About Citrus Fruits And Medicines". 2001. University of Arizona, Tucson, AZ. Available at: [http://www.consumer-health.com/services/cons\\_take14.php](http://www.consumer-health.com/services/cons_take14.php)  
Last accessed: 1/26/11.
30. Lidocaine patch. American Cancer Society. Available at: <http://www.cancer.org/Treatment/TreatmentsandSideEffects/GuidetoCancerDrugs/Lidocaine-Patch>  
Last accessed: 1/26/11.
31. Natural Medicines Comprehensive Database. Available at: <http://naturaldatabase.therapeuticresearch.com/nd/search.aspx> Last accessed: 1/29/11.
32. Drugs, Herbs and Supplements MedLine Plus U.S. National Library of Medicine. Available at: <http://www.nlm.nih.gov/medlineplus/druginformation.html> Last accessed: 1/29/11.
33. Cancer-Pain.org website Available at: <http://www.cancer-pain.org/treatments/adjutant.html>
34. Pain Management. MD Anderson Cancer Center. Available at: <http://www.mdanderson.org/patient-and-cancer-information/cancer-information/cancer-topics/dealing-with-cancer-treatment/pain-management/index.html>
35. Pain Relievers. MedLine Plus website. Available at: <http://www.nlm.nih.gov/medlineplus/painrelievers.html>
36. Portenoy RK. Adjuvant Analgesics. Available at: [http://www.stoppain.org/for\\_professionals/content/information/adjutant-update.pdf](http://www.stoppain.org/for_professionals/content/information/adjutant-update.pdf)
37. Capsaicin (Topical Route). MayoClinic.com Last updated: Nov. 1, 2010 Source: Drug Information provided by: Micromedex. Available at: <http://www.mayoclinic.com/health/drug-information/DR600303>
38. Managing Pain Related to Cancer and Bone. Available at: <http://www.boneandcancerfoundation.org/pdfs/PainPublicationFinal-2010.pdf>
39. Adult Cancer Pain V.I.2010 NCCN Clinical Practice Guidelines in Oncology. National Comprehensive Cancer Network website. Available at: [http://www.nccn.org/professionals/physician\\_gls/f\\_guidelines.asp](http://www.nccn.org/professionals/physician_gls/f_guidelines.asp)
40. Laura A. Stokowski LA. Adult Cancer Pain: Part 2--The Latest Guidelines for Pain Management. *Medscape Hematology-Oncology*. Available at: <http://www.medscape.com/viewarticle/733067>
41. Pronsky ZM, and Crowe JP. Food Medication Interactions<sup>TM</sup>16th edition, Birchrunville, PA: Food Medication Interactions: 2010.
42. Rx List The Internet Drug Index. Rx List, Inc. 2011. Available at: [http://www.rxlist.com/drugs/alpha\\_a.htm](http://www.rxlist.com/drugs/alpha_a.htm)
43. Management of Opioid Side Effects in Adult Cancer Pain V.I.2010 NCCN Clinical Practice Guidelines in Oncology. National Comprehensive Cancer Network website. Available at: [http://www.nccn.org/professionals/physician\\_gls/f\\_guidelines.asp](http://www.nccn.org/professionals/physician_gls/f_guidelines.asp)

44. Vopac. Available at: <http://www.drugs.com/cons/vopac.html>
45. Cancer Pain Treatments. ACOR. Last updated Jan.17.2007. Available at: <http://www.cancer-pain.org/treatments/adjvant.html> Last accessed: 2/9/11.
46. Lidoderm package insert. Available at: [http://www.lidoderm.com/pdf/lidoderm\\_pack\\_insert.pdf](http://www.lidoderm.com/pdf/lidoderm_pack_insert.pdf)
47. Paice JA. Mechanisms and Management of Neuropathic Pain in Cancer. Available at: <http://www.supportiveoncology.net/journal/articles/0102107.pdf>
48. Harman S. Treating neuropathic pain in cancer. Available at: <http://www.hemonctoday.com/article.aspx?rid=42641>
49. *Clinical Practice Guideline Number 9 Management of Cancer Pain* in *AHCPR Publication No. 94-0592* March 1994. Available at: <http://www.painresearch.utah.edu/cancerpain/guidelineF.html>
50. Clodronic Acid (Oral Route, Injection Route) Last updated: Nov. 1, 2010 Source: Drug Information provided by: Micromedex Available at: <http://www.mayoclinic.com/health/drug-information/DR600433>
51. Opioid Side Effects *in Guidelines for Treatment of Cancer Pain*. The Revised Pocket Edition of the Final Report of the Texas Cancer Council's Workgroup on Pain Control in Cancer Patients, 2nd edition. 1997 Available at: [http://www.texascancer.info/gftocp/opioid\\_side\\_effects.html](http://www.texascancer.info/gftocp/opioid_side_effects.html)
52. Opioid Side Effects *in Guidelines for Treatment of Cancer Pain*. Revised Pocket Edition of the Final Report of the Texas Cancer Council's Workgroup on Pain Control in Cancer Patients. 2nd edition. 1997. Available at: [http://www.texascancer.info/gftocp/opioid\\_side\\_effects.html](http://www.texascancer.info/gftocp/opioid_side_effects.html)
53. Benyamin R, Trescot A, Datta S, Buenaventura R, Adlaka R, Sehgal N, Glaser SE, and Vallejo R. Opioid Complications and Side Effects. *Pain Physician* 2008; Opioid Special Issue: 11:S105-S120. Available at: <http://www.painphysicianjournal.com/2008/march/2008;11:S105-S120.pdf>

## Pancreatic Enzymes

<p><b>PANCREATIC ENZYMES</b></p> <p><i>DO NOT CRUSH CAPSULES OR THE CAPSULE CONTENTS</i></p> <p>Individualize dosing is based on:          -clinical symptoms          -degree of steatorrhea          -fat content of the diet <sup>2</sup></p> <p><i>If symptoms of steatorrhea persist, the dosage may be increased by a healthcare professional only.</i></p> <hr/> <p><b>Creon®</b></p> <p><i>Abbott Products, Inc. formerly Solvay Pharmaceuticals</i></p> <hr/> <p><b>Pancreaze®</b></p> <p><i>Johnson &amp; Johnson</i></p> <hr/> <p><b>Zenpep®</b></p> <p><i>Eurand Pharmaceuticals</i></p> <p>Capsule with enteric-coated beads</p>	<p><b>Children 4 years &amp; older &amp; adults:</b>  <b>Starting dose:</b> 500 lipase units/kg of body weight/meal</p> <p><b>Gradually increase dosage.</b></p> <p><b>Maximum dose:</b> 2,500 lipase units/kg of body weight /meal, or &lt; or equal to 10,000 lipase units/kg of body weight/day, or &lt; 4,000 lipase units/grams fat ingested/day.</p> <p>If doses &gt; 2,500 lipase units/kg of body weight/meal, further investigation is warranted.<sup>1,2</sup></p> <p><b>Geriatric patients:</b>          Reduce the lipase units/kg of body weight/meal. They weigh more &amp; tend to eat less fat/kg of body weight.<sup>1,2</sup></p> <p><b>Dosage Schedule</b>          Generally, half of the dose for a full meal is given with a snack.</p> <p>The total daily dose should include 3 meals and 2-3 snacks/day.</p> <p><i>Changes in dosage may require an adjustment period of several days.</i></p> <hr/> <p><b>6,000 USP units of lipase</b> (19,000 USP units of protease; 30,000 USP units of amylase)</p> <p><b>12,000 USP units of lipase</b> (38,000 USP units of protease; 60,000 USP units of amylase)</p> <p><b>24,000 USP units of lipase</b> (76,000 USP units of protease; 120,000 USP units of amylase)</p> <hr/> <p><b>4,200 USP units of lipase</b> (19,000 USP units of protease; 30,000 USP units of amylase)</p> <p><b>10,500 USP units of lipase</b> (38,000 USP units of protease; 60,000 USP units of amylase)</p> <p><b>16,800 USP units of lipase</b> (76,000 USP units of protease; 120,000 USP units of amylase)</p> <p><b>21,000 USP units of lipase</b> (37,000 USP units of protease, 61,000 USP units of amylase)</p> <hr/> <p><b>5,000 USP units of lipase</b> (17,000 USP units of protease, 27,000 USP units of amylase)</p> <p><b>10,000 USP units of lipase</b> (34,000 USP units of protease, 55,000 USP units of amylase)</p> <p><b>15,000 USP units of lipase</b> (51,000 USP units of protease, 82,000 USP units of amylase)</p> <p><b>20,000 USP units of lipase</b> (68,000 USP units of protease, 109,000 USP units of amylase)</p>	<p><u>Common side effects:</u>          -stomach pain          -gas</p> <p><u>Serious side effects:</u>          -mouth irritation (not swallowed completely)          -increase uric acid levels</p> <p><u>If unable to swallow the capsule:</u>          1. Carefully open the capsules.          2. Add to small amount <u>room temperature applesauce</u>.          3. Immediately swallow the mixture (<i>Do not chew</i>)          4. Drink water to ensure all spheres are swallowed.</p> <p><u>Doses &gt; 6,000 lipase units/kg of body weight/meal:</u>          -Increased risk for colonic stricture (children &lt; 12 yrs)<sup>1</sup>          -Re-assess &amp; immediately lower dose or titrate down to lower range.</p> <p><u>Allergic reaction symptoms:</u>          Trouble with breathing, skin rash, or swollen lips. SEEK IMMEDIATE MEDICAL CARE.</p> <hr/> <p>Contains porcine-derived (pork) lipases, proteases and amylases.</p> <p><i>NOT interchangeable with other pancreatic lipase products.</i></p> <hr/> <p>Contains porcine-derived (pork) lipases, proteases and amylases.</p> <p><i>NOT interchangeable with other pancreatic lipase products.</i></p> <hr/> <p>Contains porcine-derived (pork) lipases, proteases and amylases.</p> <p><i>NOT interchangeable with other pancreatic lipase products.</i></p>
<p><b>References:</b>          1. Creon® (pancrealipase) Delayed-Release Capsules. Last reviewed on Rx List: 9/10/2010. Available at: <a href="http://www.rxlist.com/creon-drug.htm">http://www.rxlist.com/creon-drug.htm</a></p>		

## Pancreatic Enzymes

2. FDA approved Creon® Full Prescribing Information Rev. 8/2010.  
Available at: [http://www.creon-us.com/assets/pdf/FDA%20approved%20CREON\\_PI.pdf](http://www.creon-us.com/assets/pdf/FDA%20approved%20CREON_PI.pdf)
3. Pancreaze FDA Professional Prescribing Information. Available at: <http://www.drugs.com/pro/pancreaze.html>
4. Zenpep (pancrelipase) Delayed Release Capsules. Last reviewed on RxList: 9/10/2009  
Available at: <http://www.rxlist.com/zenpep-drug.htm>