




BuTrans Patch

Buprenorphine Transdermal System (BTDS) for Weekly Application

<p>Classification^{1,2}</p> <p><small>(Semisynthetic, highly lipophilic opioid; derivative of morphine alkaloid thebaine; brain tissue levels far exceed serum levels)</small></p>	<ul style="list-style-type: none"> Opioid analgesic (mu agonist; kappa & delta antagonist). Narcotic and Controlled Drug (Canada). It is often considered a <i>partial</i> mu agonist; however some recent literature suggests full potent mu activity.³ Its action may more resemble a full mu agonist at lower doses, and partial mu agonist at higher doses. Controversial! (Note, a related product, SUBOXONE consists of [buprenorphine 2mg + naloxone_{an opioid antagonist} 0.5mg] as a SL tablet used to treat opioid dependence. Bioavailability of buprenorphine-variable: Transdermal \approx 15%; SL= 30%-70%; Suboxone dosage range is 4-24mg/day buprenorphine. The amount of buprenorphine in 4 mg SL may equate to the amount in \geq16 BuTrans-20 patches. Only about 3% of the naloxone in Suboxone is absorbed; it will precipitate withdrawal if injected: \therefore useful in addiction med.)
<p>Strengths</p>	<ul style="list-style-type: none"> Patch (matrix): 5mcg/hr (0.12mg/day), 10mcg/hr (0.24mg/day), 20mcg/hr (0.48mg/day)
<p>Use/Place in Therapy</p>	<ul style="list-style-type: none"> Persistent pain of moderate intensity in adults (\geq40kg) requiring continuous opioid analgesia for an extended period of time (not suitable for unstable or widely fluctuating pain). [Higher patch strengths e.g. TRANSTEC 35-70mcg/hr (q3d) available in Europe for pain.⁴] Can be used in opioid naïve patients (alternate to codeine, tramadol) and patients previously only on prn opioids Considered when non-opioids provide inadequate relief and strong opioids undesirable in chronic non-cancer pain
<p>Contraindications (CI), official¹ CPS</p>	<ul style="list-style-type: none"> Hypersensitivity, GI (ileus, surgical abdomen), mild/intermittent/acute pain, acute asthma/obstructive airway/respiratory depression, acute alcoholism/dependence, opioid dependence/acute opioid withdrawal, convulsive disorders, MAOIs_{within 14 days}, myasthenia gravis, hepatic insufficiency, pregnancy/lactation; <40kg
<p>Dose</p> <p><small>{Patch provides sustained levels & analgesia over 7 days.}</small></p> <p><small>{High affinity for mu receptor \rightarrow blockade may last >24hrs. Effect not totally related to plasma levels.}</small></p>	<ul style="list-style-type: none"> Begin at: ♦ 5mcg/hr patch applied once weekly; titrate up as necessary or ♦ if previously on opioid (up to 80mg oral morphine equivalent/day) may start on 5-10mcg/hr patch once weekly (medication for breakthrough pain should also be provided) Dose adjustments: generally recommended after <u>7 days</u>; and not more frequently than after 3 days. Maximum dose: 20mcg/hr. (Patch applied for 7 days.) Doses \geq40mcg/hr may be associated with QT prolongation (but less than methadone!)⁵ Breakthrough pain: may be managed by acetaminophen or NSAID +/- codeine or other breakthrough meds prn Adjustments: Renal dysfx: NO dose adjustment required; (hepatic metabolism_{glucuronidation & biliary excretion}).
<p>Administration</p> 	<ul style="list-style-type: none"> Apply to: non-irritated, dry, intact skin; upper outer arm, upper chest, upper back or side of chest (always above the umbilicus) <ul style="list-style-type: none"> Do <u>not</u> apply creams or ointments etc. to skin < 6hours prior to patch application as may affect adhesion. If site irritation, consider a corticosteroid spray (e.g. beclomethasone or fluticasone) to skin area prior to patch; (this lacks data & may affect absorption). {Alternately, steroid cream post-patch or well in advance (> 6-12hr) of patch application.} Rotate sites with each new patch; choose 4 or more sites and rotate; allow 3 weeks before reusing the same site Avoid exposure of patch to direct sunlight * (\uparrow absorption). Showering, swimming & bathing should not affect patch.
<p>Drug Interactions (DI)</p> <p><small>Metabolized via CYP3A4 to nor-buprenorphine (an active metabolite).</small></p>	<ul style="list-style-type: none"> 3A4 inhibitors: \uparrow dose related toxicity of buprenorphine e.g. amiodarone, itraconazole, clarithromycin, fluconazole, erythromycin, grapefruit juice, protease inhibitors_{ritonavir, nelfinavir, amprenavir}, verapamil, diltiazem 3A4 inducers: likely to \downarrow efficacy of buprenorphine: e.g. phenobarbital, carbamazepine, phenytoin, rifampin CNS depressants: additive effects (e.g. \uparrow sedation, \downarrow alertness, confusion, dizziness) <ul style="list-style-type: none"> E.g. alcohol, benzodiazepines, sedative/hypnotics, antipsychotics, antihistamines Other: Warfarin \uparrow INR; anesthetics \downarrow hepatic blood flow & \uparrow [buprenorphine]; Benzodiazepines_{flunitrazepam}: deaths reported in addict population
<p>Adverse Events (AE)</p> <p><small>{Most are similar to other opioids.}</small></p>	<ul style="list-style-type: none"> Common on initiation: nausea^{45%}, dizziness^{27%}, somnolence^{24%}, constipation^{21%}, pruritus, dry mouth Most common in clinical trials (rates from crossover trials: for difference from placebo rates, see CPS or specific trial literature): <ul style="list-style-type: none"> anorexia, application site erythema/pruritis^{53%}, asthenia, constipation, dizziness^{27%}, dry mouth, headache, hyperhydrosis^{16%}, insomnia, nausea +/- vomiting, somnolence. [Potential QT prolongation_{with \geq40mcg/hr patch}] Serious, but less common with careful dose titration: respiratory depression_{however ceiling effect in resp depression}, hypotension
<p>Discontinuing / Withdrawal</p>	<ul style="list-style-type: none"> Consider tapering_{if higher doses} to reduce withdrawal symptoms; withdrawal generally mild & resolves in \leq2 weeks After removal of patch, levels decline gradually; \sim 50% \downarrow over \sim12hours (10-24 hrs); administering a subsequent opioid after patch removal should generally be delayed until 24hours after removal
<p>Other</p> <p>Cost / 4 weeks:</p> <p>5mcg/hr: \$ 60 10mcg/hr: \$ 105 20mcg/hr: \$ 185</p> <p><small>(includes markup & dispensing fee)</small></p> <p>Currently not covered by most drug plans!</p>	<ul style="list-style-type: none"> Steady state levels in \sim3 days. Heat sources (external): will \uparrow absorption & risks (e.g. heat pad, hot bath, sauna, sunbathing, fever, etc.) Advantages: long action useful for chronic-stable type pain; once weekly application & kappa antagonist effect may result in less dysphoria, psychological craving & dependence {However, data from Norway suggests addiction concerns}⁶. May cause less withdrawal when stopped than other opioids; incidence of constipation may be lower. Compared to the fentanyl patch: lower abuse potential, mild withdrawal symptoms, may initiate in opioid naïve. Disadvantages: long & delayed action means it is not suitable for acute or fluctuating pain; adverse effects may be sustained for \geq 24 hours after removal of patch. {If one holds that it is a partial mu agonist, this would limit the opioid effect resulting in both a ceiling dose & potential withdrawal in patients dependent on other long-term opioids.}. Studies are short term (e.g. \leq12 weeks; most \leq4weeks); results modest & benefits \approx harms (NNT = 7-8 & NNH for \uparrowAE = 6-9).

Estimated Dose Equivalencies: BuTrans (BTDS) may be 25–110x more potent than oral morphine; individual variance; highly controversial!!!⁷

		Daily Opioid Dose* ^{1,5,8,9} & Approximate Cost/4wks			
Acetaminophen + Codeine (30mg) \pm Caffeine		\leq 6 (x30mg) tabs	7-8 (x30mg) tabs	\$43	
Codeine		\leq 100mg	200 mg	\$67	400 mg \$89
Tramadol	Cost/week based on lowest cost sustained release (SR) formulations.	-	150 mg	\$56	300 mg \$100
Oral Morphine		\leq 15 mg	30 mg	\$30	60 mg \$42
Oral Oxycodone		\leq 10 mg	15 – 20 mg	\$64	30 -40 mg \$92
Oral Hydromorphone		\leq 3.75 mg	6 – 7.5 mg	\$51	12 – 15 mg \$72
Fentanyl Patch		-	-	-	12 mcg/hr \$42
		\downarrow	\downarrow	\downarrow	
Initial BuTrans patch dose if on previous opioid.		5 mcg/hr	5 mcg/hr + something for breakthru		5-10 mcg/hr + something for breakthru
Estimate of Eventual BuTrans [®] Patch Strength		5 mcg/hr \$60	10 mcg/hr \$105	20 mcg/hr * \$185	

Note however that **opioid withdrawal** may occur for patients taking long-term and/or higher doses of opioids after switching to buprenorphine!**

*Monograph does not recommend starting > 10 mcg/hr (as per "dosing" above). Table serves as a guide; actual dosing requires careful individualization & reassessment!

** Can patients on high doses of morphine &/or strong opioids be switched to transdermal buprenorphine? (See also extras under page 3 of this Q&A online.)

Currently this is not recommended in Canada and there is concern about opioid withdrawal. However, one study successfully switched cancer patients on oral morphine (120-240mg/d) and transdermal fentanyl (50-100mcg/hr) to BTDS using a potency ratios of 70:1 for morphine and 0.6:0.8 for transdermal fentanyl.¹⁰ Note, due to transdermal route, there is less bioavailability variance than oral opioids.

Anchortotally, some physicians report success with direct switching of <40-60mg/day morphine equivalent opioid regimens. Approach 1: wean patient over several weeks to about half their opioid dose, then convert to estimated equivalent buprenorphine dose +/- fast acting opioid. Approach 2: Apply first dose of equivalent dose buprenorphine patch at same time as taking last dose of long-acting opioid +/- fast acting opioid.

Table 1: Randomized controlled trials (RCT): buprenorphine transdermal system (BTDS) - BuTrans (7 day) patch, chronic non-cancer pain

	Patients	Intervention, 10, 20mcg/hr vs PI	Results (primary; other)	Comments (General: industry sponsored trials)
1. ¹¹	Low back pain, mod-sev (VAS ≥2/5) for ≥6wks & not well controlled. (most had long hx) •n=53 (28♂; 25♀); age ~54 •baseline pain: 62.1 +/- 15.5	BTDS 5, 10, 20mcg/hr vs PI + i-ii ACC30 q4-6h prn lower dose for BTDS •DB, crossover @4wk •Not ITT (only evaluated if ≥ 2 wks tx completed)	•↓ VAS: 37.6 +/- 20.7 vs 43.6 +/- 21.2 p=0.049 •use of breakthrough tabs: 1.8 vs 2.4/day (NS) •also improved: pain +: sleep, disability, etc. •AE "severe" as per patient: 53% vs 42% NNH=9 •AE: >20%: (nausea, somnolence, pruritis, asthenia, constipation, insomnia, dizziness)	•Exclusions: multiple (e.g. if expected to exceed max BTDS dose) •79 patients enrolled: 53 patients evaluated per-protocol •most patients (59%) titrated to highest dose (titrations weekly) •82% of patients chose to continue for 6 month open label follow-up where pain and QOL improvements were sustained •similar improvements in opioid & opioid naive patients
2. ¹²	Low back pain, mod-sev, on prior opioid (78 randomized) •PP: n=53 (20♂; 30♀); age ~51	BTDS 10, 20, 40mcg/hr vs PI + i-ii Acetaminophen q4-6h prn •DB, crossover @4wk •Not ITT	•Mean dose = 29.8mcg/hr vs 32.9mcg/hr •PP: Pain on 0-4 point scale: 1.9 vs 2.2 p=0.044; no difference in pain disability index	•BTDS had modest benefit vs PL considering prior opioid hx •Some +ve 2° outcomes: e.g. get out of bed, sit in chair. •6mo follow-up open label, 27/40 completed +ve. limitations: not ITT; ↑ AEs
3. ¹³	Osteoarthritis (hip or knee); mod-sev •n=135; age ~64 •baseline pain: ≥4 (BS-11) on acetaminophen 4g/day	BTDS 5, 10, 20mcg/hr vs Tramadol CR 150 - 400mg/day (+ acetaminophen prn) x 12 wk •Open label; non-inferiority	•BS-11: no difference; - 2.26 vs -2.09 (ITT) •also rescue med: sleep; QOL •AE: 226 vs 152; AE⇒DC: 14.5% vs 29.2% •AE-BTDS: nausea 30%; constip. 19%; dizzy 16% •AE-Tramadol: nausea ^{25%} , fatigue ^{18%} , pain ^{12%}	•1wk screening, 12 wk treatment; 2 week follow-up phases; 172 screened, 135 randomized. •baseline pain: BS-11: 6.16⇒3.92 vs 6.21⇒4.10 (ITT) •patient and assessor ratings of pain favoured BTDS
3. ¹⁴	Osteoarthritis (hip or knee); mod-sev •n=238 at run in; 102 42% analysed (~65%♀); age ~64 •baseline pain: ≥4 (BS-11); no recent strong opioid	BTDS 5, 10, 20mcg/hr vs buprenorphine SL 0.2-0.4mcg q6-8h (+ acetaminophen ≤1g prn) •DB, x ≤ 4wks	•BS-11: scores considered equivalent (per protocol) for morning, midday & evening •AE: patch associated with less nausea, vomiting & dizziness •Discontinuation (ITT): 53% vs 55% p=0.7; 42% discontinued due to AE	•21 day run-in •6 serious adverse events: 1 fatal MI, not deemed related to BTDS; 1 hospitalization for biliary colic/spasm & 1 hospitalization for dizziness & asthenia. •patch site redness ^{55%} & irritation ^{25%} ; some complaints of patch buckling or curling.
4. ¹⁵	Osteoarthritis (hip or knee); n=315 at run-in; 155 49% analyzed •age ~ 60, (67% ♀) •previously on opioid (≤90mg morphine equivalent; not more than 12 doses of short-acting opioid/day) or lack of relief with NSAID	BTDS 5, 10, 20mcg/hr vs PI (no rescue medication allowed) DB, parallel group; x 5 wks (1 wk run-in, 3wk titration, 1wk maintenance) [blinding was broke for 1 patient]	•patient satisfaction scale (0 – 4) at final visit: 44% vs 32% (ITT) satisfied score >2; OR=1.66 NNH=8; •AE: 70% vs 53%; NNH=6. (nausea, headache, dizziness, somnolence, pruritis at site, constipation.)	•7 day run-in on ibuprofen & inadequate relief on ibuprofen •artificial type of trial •a number of 2° endpoints did not have significant differences but some "trends" supportive; •subgroup: benefit only seen in knee subgroup, not hip
5. ¹⁶	Non-cancer pain ≥2 months; on previous combination oral opioids •n=588 at run-in; n=267 45% actually randomized; (~62%♀); age ~57	BTDS 5, 10, 20mcg/hr vs PI (+ acetaminophen 500mg prn) •DB, parallel-group x ≤ 2 wks (discontinue early if require ≥1g acetaminophen/day, or unable to continue with patch)	•proportion of subjects with ineffective tx: 51.2% vs 65%; NNH=7 (OR = 1.7995% CI: 1.09-2.95) •AE: pruritis at patch site 9.3% vs 5.1%; headache 3.9% vs 2.2%; somnolence 2.3% vs 0.7% (Open-label run-in withdrawal & early completion of study serve to underestimate true AE risks.)	•Purdue sponsored; odd/unique design: very short! •Open label run-in with BTDS for 7-21 days; only those tolerating BTDS entered & randomization was at dose achieved during run-in (may underestimate harm & overestimate efficacy)
6. ¹⁷	Osteoarthritis (hip or knee); mod-sev •n=199; age ~63	BTDS 5, 10, 20mcg/hr vs PI x 6 mo (NSAID continued, + acetaminophen prn)	•WOMAC OA Index of Pain (1°): NS •some 2°s improved: daytime movement pain	•BTDS: ?less effective in very severe OA; ?patient preferred •no difference in BTDS & PI in mean dose or titrations required

Select Studies with different dose (e.g. 35-70mcg/hr) or dosage form (e.g. 3-4 day patch) than available in Canada; but of interest

1. ¹⁸	Chronic cancer pain •open label; + tramadol ≤ 200mg/day prn	BTDS 35 mcg/hr vs Buprenorphine SL & PI	•pain •mental health & vitality; QOL	- dose higher than available in Canada
2. ¹⁹	Chronic cancer & non-cancer pain •n=137 (90 BTDS; 47 PI) (~50% ♀)	BTDS 35 - 70 mcg/hr vs PI (+ buprenorphine SL 0.2mg prn) •DB; x 9 days	•breakthru pain as reflected by need for prn: ↓ use of buprenorphine 0.6 mg vs 0.4mg p=0.03. •patient's assessment of pain: NS. •nausea, dizzy & vomiting	•6day open-label run-in with buprenorphine SL 0.8-1.6mg/day prn •72hr patch
3. ²⁰	Chronic cancer & non-cancer pain not controlled on weak opioids •n=157 (55% ♀); age 59	BTDS 35 - 70 mcg/hr vs PI (+ buprenorphine SL 0.2mg prn) •DB; x 15 days	•43.5% patients reported good pain relief vs 32.4% (NNH=9); response rate higher at 35-52.5mcg/hr, but NS at 70mcg/hr. •78% overall reported ≥1 AE (CNS & GI)	•improved sleep reported •72hr patch used •↓ need for prn: 56.7% vs 8%;
4. ²¹	Chronic cancer & non-cancer pain •n=445	BTDS 35 - 70 mcg/hr vs PI •?	•?greater pain relief vs PI	•72hr patch used. •239 patients chose to continue BTDS in open follow-up study

ACC30=acetaminophen/caffeine/codeine 30mg AE=adverse events BS-11=box score 11 point rating system CR=controlled release DB=double-blind ITT=intention to treat NNH=number needed to treat to harm one patient NNT=number needed to treat to benefit one patient NS=not statistically significant OR=odds ratio PI=placebo QOL=quality of life SL=sublingual VAS=visual analogue scale

Additional References & Links

- o Pharmacist's Letter. *Onsolis* (Fentanyl Buccal Film) and *BuTrans* (Buprenorphine Patch). Aug 2010. NPS (Australia) Summary of buprenorphine patch [Norspan: http://www.nps.org.au_data/assets/pdf_file/0008/14687/buprenorphine.pdf](http://www.nps.org.au_data/assets/pdf_file/0008/14687/buprenorphine.pdf)
- o RxFiles: Opioid Comparison Chart in RxFiles Drug Comparison Charts – 8th Edition; accessed online at: <http://www.rxfiles.ca/rxfiles/uploads/documents/members/CHT-Opioid.pdf>; RxFiles Opioid Newsletter 2005: <http://www.rxfiles.ca/rxfiles/uploads/documents/Pain-Chronic-NonCa-NEWSLETTER-Header.pdf>; Opioid Treatment Agreement: <http://www.rxfiles.ca/rxfiles/uploads/documents/Pain-CNMP-Opioid-TreatmentAGREEMENT.doc>; Switching to BuTrans Anecdotes²²; Canadian Opioid Guidelines 2010 (National Pain Centre): <http://nationalpaincentre.mcmaster.ca/opioid/>

References

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- CPS 2010 Product Monograph - BuTrans
- Heit HA, Gourlay DL. Buprenorphine: new tricks with an old molecule for pain management. Clin J Pain. 2008 Feb;24(2):93-7. Review. Erratum in: Clin J Pain. 2008 May;24(4):370.
- Pergolizzi J, Aloisi AM, Dahan A, Filitz J, Langford R, Lika R, et al. Current Knowledge of Buprenorphine and Its Unique Pharmacological Profile. Pain Pract. 2010 May 17.
- NHS-York Hospitals - Palliative care analgesic dose conversion chart <http://www.yacpalliativecare.com/documents/download71.pdf>
- Wedam EF, Bigelow GE, Johnson RE, Nuzzo PA, Haigney MC. QT-interval effects of methadone, levomethadyl, and buprenorphine in a randomized trial. Arch Intern Med. 2007 Dec 10;167(22):2469-75.
- Skurvtveit S, Furu K, Kaasa S, Borchgrevink PC. Introduction of low dose transdermal buprenorphine -- did it influence use of potentially addictive drugs in chronic non-malignant pain patients? Eur J Pain. 2009 Oct;13(9):949-53.
- Kress HG. Clinical update on the pharmacology, efficacy and safety of transdermal buprenorphine. Eur J Pain. 2009 Mar;13(3):219-30. Epub 2008 Jun 24.
- Sittl R, Lika R, Nautrup BP. Equipotent doses of transdermal fentanyl and transdermal buprenorphine in patients with cancer and noncancer pain: results of a retrospective cohort study. Clin Ther. 2005 Feb;27(2):225-37.
- Palliative Care Formulary 3 (Twycross et al, 2007)
- Mercadante S, Casuccio A, Tirelli W, Giarratano A. Equipotent doses to switch from high doses of opioids to transdermal buprenorphine. Support Care Cancer. 2009 Jun;17(6):715-8.
- Gordon A, Rashiq S, Moulin DE, Clark AJ, Beaulieu AD, Eisenhoffer J, et al. Buprenorphine transdermal system for opioid therapy in patients with chronic low back pain. Pain Res Manag. 2010 May-Jun;15(3):169-78.
- Gordon A, Callaghan D, Spink D, Cloutier C, et al. Buprenorphine transdermal system in adults with chronic low back pain: a randomized, double-blind, placebo-controlled crossover study, followed by an open-label extension phase. Clin Ther. 2010 May;32(5):844-60.
- Karlsson M, Berggren AC. Efficacy and safety of low-dose transdermal buprenorphine patches (5, 10, and 20 microg/h) versus prolonged-release tramadol tablets (75, 100, 150, and 200 mg) in patients with chronic osteoarthritis pain: a 12-week, randomized, open-label, controlled, parallel-group noninferiority study. Clin Ther. 2009 Mar;31(3):503-13.
- James IG, O'Brien CM, McDonald CJ. A Randomized, Double-Blind, Double-Dummy Comparison of the Efficacy and Tolerability of Low-Dose Transdermal Buprenorphine (BuTrans(R)) Seven-Day Patches) With Buprenorphine Sublingual Tablets (Temgesic(R)) in Patients With Osteoarthritis Pain. J Pain Symptom Manage. 2010 Aug;40(2):266-278.
- Munera C, Drehabl M, Sessler NE, Landau C. A randomized, placebo-controlled, double-blinded, parallel-group, 5-week study of buprenorphine transdermal system in adults with osteoarthritis. J Opioid Manag. 2010;6(3):193-202.
- Landau CJ, Carr WD, Razzetti AJ, Sessler NE, Munera C, Ripa SR. Buprenorphine transdermal delivery system in adults with persistent noncancer-related pain syndromes who require opioid therapy: a multicenter, 5-week run-in and randomized, double-blind maintenance-of-analgesia study. Clin Ther. 2007 Oct;29(10):2179-93. Erratum in: Clin Ther. 2009 Mar;31(3):677.
- Breivik H, Ljosaa TM, Stengaard-Pedersen K, Persson J, et al. A 6-months, randomised, placebo-controlled evaluation of efficacy & tolerability of a low-dose 7-day buprenorphine-Transdermal patch in OA naive to potent opioids. Scaninavian J of Pain 2010:122-141. (not available on pubmed as of Nov 23, 2010).
- Pace MC, Passavanti MB, Grella E, Mazzariello L, Maisto M, Barbarisi M, Baccari E, Sansone P, Aurilio C. Buprenorphine in long-term control of chronic pain in cancer patients. Front Biosci. 2007 Jan 1;12:1291-9.
- Sorge J, Sittl R. Transdermal buprenorphine in the treatment of chronic pain: results of a phase III, multicenter, randomized, double-blind, placebo-controlled study. Clin Ther. 2004 Nov;26(11):1808-20.
- Sittl R, Griessinger N, Lika R. Analgesic efficacy and tolerability of transdermal buprenorphine in patients with inadequately controlled chronic pain related to cancer and other disorders: a multicenter, randomized, double-blind, placebo-controlled trial. Clin Ther. 2003 Jan;25(1):150-68.
- Bohme K. Buprenorphine in a transdermal therapeutic system—a new option. Clin Rheumatol. 2002 Feb;21 Suppl 1:S13-6.



²² **Comments (anecdotal) from clinicians on switching from other opioids to BuTrans**

- Officially not recommended in Canada, but some experience has been positive
 - Limited experience; if done, most success with tapering down the other opioids prior to switch to Butrans 5 or 10 and then titrated up as necessary. Direct opioid rotations mostly only for doses <40-60 mg/day of morphine.
 - Encourage non-drug therapy complementary approaches in addition to drug therapy; essential for long term success of CNCP
 - Relative potency for switching is not well established:
 - BuTrans 5 = .12 mg/day \approx 10 mg/day morphine or 7.5 mg/day oxycodone
 - BuTrans 10 = .24 mg/day \approx 20mg/day morphine or 15 mg/day oxycodone
 - BuTrans 20 = .48 mg/day \approx 40 mg/day morphine or 30 mg/day oxycodone
 - Example- pt on 40 mg morphine (Meslon 20mg bid) with poor pain relief (VAS 8/10)
 - **Option #1 (preferred?)** Wean patient down to 20mg/day (10 mg am 15mg pm X 1-2 weeks the 15mg BID X 1- 2 weeks the 10 mg am 15mg pm X 1-2 weeks then Sat am take last does of 10mg M-Eslon and apply BuTrans 10mg patch. Use MS-IR 5 mg bid prn for any withdrawal or severe pain
 - **Option 2** = Patient on 20 mg M-Eslon bid; Sat am apply BuTrans 20 patch and take last dose of 20mg M-Eslon. Then use MS-IR 5-7.5 mg bid-tid severe pain or withdrawal.
- [MS-IR = immediate release morphine sulphate]