Additional file 1

Reference	Condition & No. of Patients	Trial Design, Duration & Follow Up	Study Outcome Measures	Dosing Regimen for Ibuprofen and Placebo trial arms	Details of Men and Women Participating in Ibuprofen and Placebo trial arms	Analgesic Outcome Results for Ibuprofen and Placebo	Trial Withdrawals & Exclusions
Ahlström U, Bakshi R, Nilsson P, Wahlander L. The analgesic efficacy of diclofenac dispersible and ibuprofen in postoperative pain after dental extraction. Eur J Clin Pharmacol 1993; 44(6):587-8.	Third Molar Extraction n= 127 Age: 18 - 40	RCT, DB, single oral dose, parallel groups. 4hr washout prior to start. Evaluated at 0, 20, 40 mins 1hr then hourly intervals for 6 hrs. Medication taken when baseline pain was at least moderate intensity (>30mm).	PI (VAS scale) "no Pain at all"- "Agonising pain" Global Rating by patient	Ibuprofen (400mg) n= 32 Placebo n= 30	Women ibuprofen 400 mg n = 17 placebo n= 17 Men ibuprofen 400 mg n= 15 placebo n= 13	Ibuprofen was significantly superior to Placebo by 40mins (p=0.01) this continued for 6hrs. TOTPI & SPID; Ibuprofen was significantly superior to placebo (p<0.0001). *6hr SPID:* Ibuprofen 188mm Placebo 32mm No of patients achieving at least 50% maxTOTPAR: Ibuprofen 19 / 32 Placebo 2 / 30	97 analysed. Exclusions: 30 for various protocol violations.
Bakshi R, Frenkel G, Dietlein G, Meurer Witt B, Schneider B, Sinterhauf U. A placebo-controlled comparative evaluation of diclofenac dispersible versus ibuprofen in postoperative pain after third molar surgery. J-Clin-Pharmacol 1994; 34(3):225-30.	Third Molar Extraction n=257 Age: Adults up to 65	RCT, DB, single oral dose, parallel groups. LA. Self-assessed at 0, 20 mins, 40mins, 1hr, 1.5 hrs, 2 hrs then hourly intervals for 6 hrs. Medication taken when baseline pain was of at least severe intensity.	PI (VAS scale) -"no Pain - pain could not be worse" PR (5pt scale) - (none, poor, mod., sufficient, total) Global Rating (5pt scale) by patient and by observer	Ibuprofen (400mg) n= 80 Placebo n= 82	Women ibuprofen 400 mg n = 34 placebo n= 39 Men ibuprofen 400 mg n= 46 placebo n= 43	Ibuprofen was significantly superior to placebo for TOTPAR and both global ratings (p<0.01). *6hr TOTPAR:* Ibuprofen 14.9 Placebo 8.85 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 57 / 80 Placebo 31 / 82	245 analysed. Exclusions: 9 did not experience severe pain, 2 remedicated before 1 hr, 1 completed the diaries incorrectly.
Cooper SA, Needle SE, Kruger GO. Comparative analgesic potency of aspirin and ibuprofen. J Oral Surg 1977; 35(11):898-903.	Third Molar Extraction n= 245 Age: ?	RCT, DB, single oral dose, parallel groups. LA. Self-assessed at home at 0 then hourly intervals for 4 hrs. Medication taken when baseline pain was of moderate to severe intensity.	PI (4pt scale) - Standard PR (5pt scale) - Standard 50% PR (y / n) Global Rating (5pt scale) by patient	Ibuprofen (400mg) n= 40 Placebo n= 40	Women ibuprofen 400 mg n = 22 placebo n= 26 Men ibuprofen 400 mg n= 18 placebo n= 14	Ibuprofen at both doses was significantly superior to placebo for all measures of efficacy (p<0.05) *4 hr TOTPAR:* Ibuprofen 400mg 7.32 Placebo 3.32 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 20 / 40 Placebo 6 / 40	192 analysed. Exclusions: 17 provided uninterpretable data, 12 took confounding medication, 10 were lost to follow up, 9 did not need medication, 5 fell asleep.
Cooper SA, Engel J, Ladov M, Precheur H, Rosenheck A, Rauch D. Analgesic efficacy of an ibuprofen codeine combination. Pharmacotherapy 1982; 2(3):162-7.	Third Molar Extraction n= 316 Age: 16 - 65	RCT, DB, single oral dose, parallel groups. Mostly LA. Self-assessed at home at 0 then hourly intervals for 4 hrs. Medication taken when baseline pain was of moderate to severe intensity.	PI (4pt scale) - Standard PR (5pt scale) - Standard 50% PR (y / n) Global Rating (5pt scale) by patient	Ibuprofen (400mg) n=38 Placebo n=46	Women ibuprofen 400 mg n = 25 placebo n= 33 Men ibuprofen 400 mg n= 13 placebo n= 13	All active treatments were significantly superior to placebo for SPID & TOTPAR (no p value given). *4hr TOTPAR:* Ibuprofen 8.39 Placebo 2.65 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 22 / 38 Placebo 5 / 46	249 analysed. Exclusions: 30 were lost to follow up, 15 did not req. medication, 11 remedicated before 1 hr, 6 missed more the 1 evaluation, 3 medicated with slight pain, 1 did not take all the medication, 1 medicated over 24hrs after surgery
Cooper SA, Berrie R, Cohn P. Comparison of ketoprofen, ibuprofen, and placebo in a dental surgery pain model. Adv Ther 1988; 5:43-53.	Third Molar Extraction n=201 Age: Adults	RCT, DB, single oral dose, parallel groups. LA + sedative. Self-assessed at home at 0 then hourly intervals for 6 hrs. Medication taken when baseline pain was of moderate to severe intensity.	PI (4pt scale) - Standard PR (5pt scale) - Standard 50% PR (y / n) Global Rating (5pt scale) by patient	Ibuprofen (400mg) n=37 Placebo n=43	Women ibuprofen 400 mg n = 24 placebo n= 27 Men ibuprofen 400 mg n= 13 placebo n= 16	Ibuprofen was significantly superior to placebo for all measures of efficacy (p<0.01). *6 hr TOTPAR:* Ibuprofen 11.32 Placebo 4.67 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 19 / 37 Placebo 6 / 43	161 analysed. Exclusions: 20 did not req. medication, 13 were lost to follow up, 7 for various protocol violations.
Cooper SA, Schachtel BP, Goldman E, Gelb S, Cohn P. Ibuprofen and acetaminophen in the relief of acute pain: a randomized, double blind, placebo controlled study. J Clin Pharmacol 1989; 29(11):1026-30.	Third Molar Extraction n= 194 Age: 16 +	RCT, DB, single oral dose, parallel groups. LA. Self-assessed at home at 0, 0.5, 1hrs then hourly intervals for 6 hrs. Medication taken when baseline pain was of moderate to severe intensity.	PI (4pt scale) - Standard PR (5pt scale) - Standard 50% PR (y / n) Global Rating (5pt scale) by patient	Ibuprofen (400mg) n= 61 Placebo n= 64	Women ibuprofen 400 mg n = 40 placebo n= 51 Men ibuprofen 400 mg n= 21 placebo n= 13	Ibuprofen was significantly superior to placebo for all measures of efficacy (p<0.001) *6 hr TOTPAR:* Ibuprofen 11.32 Placebo 4.67 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 37 / 61 Placebo 9 / 64	184 analysed. Exclusions: 2 were lost to follow up, 2 did not req. medication, 4 missed more than 1 evaluation, 1 had insufficient baseline pain, 1 failed to complete the diary at the appropriate time
De Miguel Rivero C, Araujo CG, Sousa MM et al. Comparative efficacy of oral ibuprofen-arginine, intramuscular magnesic dipyrone and placebo in patients with postoperative pain following total hip replacement. CLIN-DRUG-INVEST 1997; 14(4):276-85.	Hip replacement n= 106 Age: 20 - 84	RCT, DB, single oral or intramuscular dose, parallel groups. Patient assessment at 10, 20, 30, 45, 60 and 90 mins the hourly up to 5 hours. Medication taken when baseline pain was of a moderate to severe intensity (≥50mm VAS).	PI (VAS scale) "no pain" - "unbearable pain" Global assessment ("overall evaluation of study medication")	Ibuprofen - arginine (400mg) n= 36 Placebo n= 35	Women ibuprofen 400 mg n = 15 placebo n= 18 Men ibuprofen 400 mg n= 21 placebo n= 17	No statistically significant differences between either active treatment groups, both superior to placebo. *5hr SPID* Ibuprofen-arginine 186.98 Placebo 119.81 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 26 / 36 Placebo 16 / 35	Three patients (1 from placebo group, 2 from dipyrone group) did not receive the study medication.
Dionne R A, McCullagh L. Enhanced analgesia and suppression of plasma beta-endorphin by the S(+)-isomer of ibuprofen. Clin Pharmacol Ther 1998; 63(6):694-701.	Third molar extraction n= 181 Age: 16+	RCT, DB,single oral dose, parallel groups. LA. Patient assessment at 15, 30 and 45 mins then hourly up to 6 hours. Medication taken when baseline pain was of moderate to severe intensity.	PI (4 pt scale) - Standard and VAS measure PR (5pt scale) - Standard and VAS Onset of meaningful pain relief ("you feel better though may have more pain that needs relieving")	Ibuprofen (s(+)-) 400mg n=50 Ibuprofen (racemic) 400mg n=50 Placebo n= 25	Women ibuprofen 400 mg n = 76 placebo n= 17 Men ibuprofen 400 mg n= 24 placebo n= 8	Ibuprofen (s(+)-) 400mg was statistically differentiated from Ibuprofen 400mg (racemic) and placebo. Ibuprofen (s(+)-) 200mg nad Ibuprofen (racemic) were similar but superior to placebo. *6hr TOTPAR* Ibuprofen (s(+)-) 400mg 14.85 Ibuprofen (racemic) 11.52 Placebo 3.45 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 61 / 100 Placebo 2 / 25	Four patients were excluded as impaction was neither partial or bony at the time of surgery. One further patient was excluded as remedication was administered within one hour of the study drug.

Reference	Condition & No. of Patients	Trial Design, Duration & Follow Up	Study Outcome Measures	Dosing Regimen for Ibuprofen and Placebo trial arms	Details of Men and Women Participating in Ibuprofen and Placebo trial arms	Analgesic Outcome Results for Ibuprofen and Placebo	Trial Withdrawals & Exclusions
Forbes JA, Barkaszi BA, Ragland RN, Hankle JJ. Analgesic effect of fendosal, ibuprofen and aspirin in postoperative oral surgery pain. Pharmacotherapy 1984; 4(6):385-91.	Third Molar Extraction n= 136 Age: 15 +	RCT, DB, single oral dose, parallel groups. GA. Self-assessed at home at 0 then hourly intervals for 12 hrs. Medication taken when baseline pain was of moderate to severe intensity. Follow up 5 days post surgery with the research nurse.	PI (4pt scale) - Standard PR (5pt scale) - Standard 50% PR (y / n) Global Rating (5pt scale) by patient	Ibuprofen (400 mg) n=28 Placebo n=28	Women ibuprofen 400 mg n = 16 placebo n= 16 Men ibuprofen 400 mg n= 12 placebo n= 12	Ibuprofen was significantly superior to placebo for all measures of efficacy (p<0.01) *6 hr TOTPAR:* Ibuprofen 15.79 Placebo 3.79 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 21 / 28 Placebo 3 / 28	109 analysed. Exclusions: 21 did not req. medication, 2 took rescue medication instead of the trial medication, 2 remedicated despite having some relief, 2 remedicated before 2 hrs.
Forbes JA, Kehm CJ, Grodin CD, Beaver WT. Evaluation of ketorolac, ibuprofen, acetaminophen, and an acetaminophen codeine combination in postoperative oral surgery pain. Pharmacotherapy 1990; 10(6(Pt 2)):94S-105S.	Third Molar Extraction n=269 Age 15 +	RCT, DB, single then multiple oral dose, parallel groups. GA / LA - unclear. Self assessed at home at 0,1 then hourly for 6 hours. Medication taken when baseline pain was of moderate to severe intensity. Follow up 5 days post surgery.	PI (4pt scale)- Standard PR (5pt scale)- Standard 50% PR (y / n) Global Rating (5pt scale) by patient	Ibuprofen (400mg) n= 32 Placebo n= 34	Women ibuprofen 400 mg n = 19 placebo n= 16 Men ibuprofen 400 mg n= 13 placebo n= 18	Ibuprofen was significantly superior to placebo for all measures of analgesia (p<0.05 at least). *6 hr TOTPAR:* Ibuprofen 10.47 Placebo 1.88 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 15 / 32 Placebo 0 / 34	206 analysed. Exclusions; 3 lost to follow up, 1 lost report card, 22 did not req. med., 8 remed despite having relief from study med., 6 remed with only slight pain, 13 remed < 2hrs, 7 failed to follow instructions , 3 did not complete the forms.
Forbes JA, Edquist IA, Smith FG, Schwartz MK, Beaver WT. Evaluation of bromfenac, aspirin, and ibuprofen in postoperative oral surgery pain. Pharmacotherapy 1991; 11(1):64-70.	Third Molar Extraction n= 288 Age 15 +	RCT, DB, single oral dose, parallel groups. LA. Self assessed at home at 0,1 then hourly for 8 hours. Medication taken when baseline pain was of moderate to severe intensity. Follow up 5 days post surgery.	PI (4pt scale)- Standard PR (5pt scale)- Standard 50% PR (y / n) Global Rating (5pt scale) by patient	Ibuprofen (400mg) n= 37 Placebo n= 39	Women ibuprofen 400 mg n = 24 placebo n= 22 Men ibuprofen 400 mg n= 13 placebo n= 17	Ibuprofen was significantly superior to placebo for all measures of efficacy(p<0.05 at least) *8 hr TOTPAR:* Ibuprofen 14.30 Placebo 2.59 *6 hr TOTPAR calculated from the mean hourly scores* Ibuprofen 10.97 Placebo 2.49 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 18 / 37 Placebo 1 / 39	241 analysed. Exclusions: 7 were lost to follow up, 12 did not req. med., 4 remed with some relief, 1 remed with slight pain, 19 remed before 2 hours, 2 lacked consistency, 1 did not complete the form, 1 took only part of the med.
Forbes JA, Beaver WT, Jones KF et al. Analgesic efficacy of bromfenac, ibuprofen, and aspirin in postoperative oral surgery pain. Clin Pharmacol Ther 1992; 51(3):343-52.	Third Molar Extraction n= 338 Age 15 +	RCT, DB, single oral dose, parallel groups. LA. Self assessed at home at 0,1 then hourly for 8 hours. Medication taken when baseline pain was of moderate to severe intensity. Follow up 5 days post surgery.	PI (4pt scale)- Standard PR (5pt scale)- Standard 50% PR (y / n) Global Rating (5pt scale) by patient	Ibuprofen (400mg) n= 38 Placebo n= 38	Women ibuprofen 400 mg n = 19 placebo n= 19 Men ibuprofen 400 mg n= 19 placebo n= 19	Ibuprofen was significantly superior to placebo for all measures of efficacy(p<0.01) *8 hr TOTPAR:* Ibuprofen 14.82 Placebo 2.34 *6 hr TOTPAR calculated from the mean hourly scores* Ibuprofen 11.79 Placebo 2.06 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 20 / 38 Placebo 0 / 38	280 analysed. Exclusions; 3 did not return form, 14 did not req. med., 4 remed despite some relief, 6 remed with slight pain, 18 remed before 2 hrs, 2 lacked consistency, 2 did not complete form, 2 took only part of med., 5 took back up med., 2 eval at
Frame JW, Evans CR, Flaum GR, Langford R, Rout PG. A comparison of ibuprofen and dihydrocodeine in relieving pain following wisdom teeth removal. Br Dent J 1989; 166(4):121-4.	Third Molar Extraction n= 148 Age 16 +	RCT, DB, single oral dose, parallel groups. LA. Self assessed at home at 0, 0.5, 1 then hourly for 5 hours. Medication taken when baseline pain was of at least moderate intensity.	PI (9pt scale)- Non Standard PR (5pt scale)- Standard 50% PR (y / n)	Ibuprofen (400mg) n= 42 Placebo n= 38	Women ibuprofen 400 mg n = 30 placebo n= 32 Men ibuprofen 400 mg n= 19 placebo n= 18	At 2 and 3 hours Ibuprofen was significantly superior to placebo. *5 hr TOTPAR* *calculated from the graph* Ibuprofen 12.85 Placebo 7.95 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 26 / 42 Placebo 0 / 38	123 analysed. Exclusions: 9 did not take the medication, 7 were lost to follow up, 1 was asleep so did not complete the forms, 1 had complications so did not complete the form, 7 had slight pain
Fricke J, Halladay S, Francisco C. Efficacy and safety of naproxen sodium and ibuprofen for pain relief after oral surgery. Curr Ther Res Clin Exp 1993; 54(6):619-27.	Third Molar Extraction n= 207 Age 15 +	RCT, DB, single oral dose, parallel groups. 72 hr washout prior to start. LA. Self assessed at home at 0, 20, 30, 40, 60min then hourly for 12 hours. Medication taken when baseline pain was of moderate intensity. Review 1 / 2 days after the trial.	PI (4pt scale)- Standard PR (5pt scale)- Standard 50% PR (y / n) Global Rating (5pt scale) by patient 50% PR (y / n)	Ibuprofen (400mg) n= 81 Placebo n= 39	Women ibuprofen 400 mg n = 53 placebo n= 26 Men ibuprofen 400 mg n= 28 placebo n= 13	Ibuprofen was significantly superior to placebo for all measures after 30 mins. *6 hr TOTPAR* Ibuprofen 10.9 Placebo 2.9 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 40 / 81 Placebo 2 / 39	201 analysed. Exclusions: 1 took the medication twice, 5 had insufficient pain.
Gay C, Planas E, Donado M et al. Analgesic efficacy of low doses of dexketoprofen in the dental pain model: A randomised, double-blind, placebo-controlled study. Clinical Drug Investigation 1996; 11(6):320-30.	Third Molar Extraction n= 206 Age 18 - 60	RCT, DB, single oral dose, parallel groups. 12 hr washout prior to start. LA. Self assessed at "regular intervals" for 6 hours. Medication taken when baseline pain was of moderate to severe intensity.	PI (4pt scale)- Standard PR (5pt scale)- Standard 50% PR (y / n) Global Rating (5pt scale) by patient PI (VAS) - no pain to worst pain imaginable	Ibuprofen (400mg) n= 41 Placebo n= 39	Women ibuprofen 400 mg n = 22 placebo n= 23 Men ibuprofen 400 mg n= 19 placebo n= 16	Ibuprofen was significantly superior to placebo for all summary measures of analgesia (p< 0.05). *6 hr TOTPAR* Ibuprofen 13.6 Placebo 5.2 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 9 / 41 Placebo 7 / 39	194 analysed. Exclusions: 2 remedicated before 1 hour, 10 failed to complete the assessments within 15 mins of the scheduled time.
Hersh, E. V.; Levin, L. M.; Cooper, S. A. and others. Ibuprofen liquigel for oral surgery pain. Clinical Therapeutics. 2000; 22:1306-1318.	Third molar extraction n= 210 Age:16+	RCT, DB, single oral dose, parallel groups. LA.Patient assessment at 15, 30, 45, 60 and 90 mins then hourly up to 6 hours. Medication was taken when baseline pain was of moderate to severe intensity (≥50mm VAS).	PI (4pt scale) - Standard PR (5pt scale) - Standard Global assessment of study medication Time to "first perceptible relief" Time to " meaningful relief"	Ibuprofen liquigel 400mg n= 59 Placebo n= 27	Women ibuprofen 400 mg n = 41 placebo n= 18 Men ibuprofen 400 mg n= 18 placebo n= 9	Both Ibuprofen treatment groups were statistically superior to placebo. *6hr TOTPAR* Ibuprofen liquigel 400mg 16.56 Placebo 5.25 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 47 / 59 Placebo 5 / 27	All patients were included.

Reference	Condition & No. of Patients	Trial Design, Duration & Follow Up	Study Outcome Measures	Dosing Regimen for Ibuprofen and Placebo trial arms	Details of Men and Women Participating in Ibuprofen and Placebo trial arms	Analgesic Outcome Results for Ibuprofen and Placebo	Trial Withdrawals & Exclusions
Hill. C. M.; Balkenohl, M.; Thomas, D. W. and others. Pregabalin in patients with postoperative dental pain. European Journal of Pain. 2001; 5:119-124.	Third molar extraction n= 206 Age: 18 - 54	RCT, DB, single oral dose, parallel groups. LA. Patient assessment at 30 mins then hourly up to 12 hours. Medication taken when baseline pain was of at least moderate intensity.	PI (4pt scale) - Standard PR (5pt scale) - Standard	Ibuprofen 400mg n= 49 Placebo n= 50	Women ibuprofen 400 mg n = 28 placebo n= 31 Men ibuprofen 400 mg n= 21 placebo n= 19	Ibuprofen 400mg and Pregabalin 300mg were significantly superior to placebo. *6hr TOTPAR* Ibuprofen 400mg 10.12 Placebo 3.8 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 22 / 49 Placebo 5 / 50	Eight patients failed to reach the neccesary pain level, one patient withdrew, one patient did not undergo surgery, one patient had abnormal ECG and one patient took study -prohibited medication.
Jain AK, Ryan JR, McMahon FG, Kuebel JO, Walters PJ, Noveck C. Analgesic efficacy of low dose ibuprofen in dental extraction pain. Pharmacotherapy 1986; 6(6):318-22.	Third Molar Extraction n= 260 Age 18 - 65	RCT, DB, single oral dose, parallel groups. Self-assessed at home at 0, 1 then hourly for 6 hours. Medication taken when baseline pain was of moderate to severe intensity.	PI (4pt scale)- Standard wording but scale 1-4 PR (5pt scale)- Non Standard Global Rating (5pt scale) by patient PI (VAS) - "no pain" - "worst ever pain"	Ibuprofen (400mg) n= 49 Placebo n= 47	Women ibuprofen 400 mg n = 26 placebo n= 27 Men ibuprofen 400 mg n= 23 placebo n= 20	All doses of ibuprofen were significantly superior to placebo (p<0.001). *6hr SPID* Ibuprofen 400mg 3.0 Placebo -1.73 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 9 / 49 Placebo 0 / 47	227 analysed. Exclusions: 10 remedicated before 1 hr, 19 did not take the medication or were lost to follow up, 2 had mild baseline pain, 1 missed >2 evaluations and 1 used confounding drugs.
Jain A, Mcmahon F, Ryan J, Narcisse C. A double-blind study of ibuprofen 200 mg in combination with caffeine 100 mg, ibuprofen 400 mg, and placebo in episiotomy pain. Curr Ther Res Clin Exp 1988; 43(4):762-79.	Episiotomy n= 161 Age 18 +	RCT, DB, single oral dose, parallel groups. 4hr washout prior to start. Assessed by trained nurse observer at 0, 0.5, 1 then hourly for 6 hours. Medication taken when baseline pain was of moderate to severe intensity.	PI (4pt scale)- Standard PR (5pt scale)- Standard Time to meaningful relief Global Rating (5pt scale) by patient Overall improvement (7pt scale) by patient	Ibuprofen (400mg) n= 49 Placebo n= 48	Women ibuprofen 400 mg n = 49 placebo n= 48 No men included	Ibuprofen was significantly superior to placebo for most summary measures of analgesia (p<0.01). *6 hr TOTPAR* Ibuprofen 14.4 Placebo 8.61 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 33 / 49 Placebo 17 / 48	147 analysed. Exclusions: 11 remedicated before 2 hrs, 2 received confounding agents, 1 was under 18 yrs old.
Johnson G H, Wagoner D V, Brown J et al. Bromfenac Sodium, Acetaminophen / Oxycodone, Ibuprofen and Placebo for Relief of Postoperative Pain. Clin Ther 1999; 19(3):507	Abdominal hysterectomy (with or without salpingo-oophorectomy) or caesarean section n= 238 Age:18+	RCT, DB, single oral dose, parallel groups. Patient assessment at 15 and 30 mins then hourly up to 6 hours. Medication taken when baseline pain was of moderate to severe intensity.	PI (4pt scale) - Standard PR (5pt scale) - Standard Global rating of study drug effectiveness (1-5 scale as opposed to 0-4)	Ibuprofen (400mg) n= 48 Placebo n= 48	Women ibuprofen 400 mg n = 48 placebo n= 48 No men included	*6hr TOTPAR* Ibuprofen 400mg 7.73 Placebo 5.48 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 15 / 48 Placebo 9 / 48	Two patients were excluded from the analysis as data was invalid (no further details).
Malmstrom K, Daniels S, Kotey P, Seidenberg B C, Desjardins P J. Comparison of rofecoxib and celecoxib, two cyclooxygenase-2 inhibitors, in postoperative dental pain: a randomized, placebo- and active-comparator-controlled clinical trial. Clin Ther 1999; 21(10):1653-63.	Third molar extraction n= 272 Age 18+	RCT, DB, single oral dose, parallel groups.Patient assessment at 15, 30, 45, 60, and 90 mins then hourly up to 8 hours, some measures taken later still at 10, 12 and 24 hours. Post-study visit 5-14 days post-surgery. Medication taken when baseline pain was of moderate to severe intensity.	PI (4pt scale) - Standard PR (5pt scale) - Standard Global evaluation (0= poor to 4= excellent) Time to "perceptible pain relief" Time to "meaningful pain relief"	Ibuprofen (400mg) n= 46 Placebo n= 45	Women ibuprofen 400 mg n = 32 placebo n= 27 Men ibuprofen 400 mg n= 14 placebo n= 18	Ibuprofen had significantly greater analgesic effect compared to celecoxib and placebo. *6hr TOTPAR* Ibuprofen 400mg 15.16 Placebo 3.7 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 33 / 46 Placebo 4 / 45	One patient withdrew due to excessive bleeding, four patients completed treatment but failed to attend follow-up.
McQuay H J, Angell K, Caroll D, et al. Ibuprofen compared with ibuprofen plus caffeine after third molar surgery. Pain 1996; 66:247-51.	Third Molar Extraction n= 218 Age 16 - 53	RCT, DB, single oral dose, parallel groups. 12 hr washout prior to start. LA. Self assessed for 6 hours (did not say at what points). Medication taken if baseline pain was of moderate to severe intensity within 2 hours of surgery.	PI (4pt scale)- Standard PR (5pt scale)- Standard Global Rating (5pt scale) by patient PI (VAS) - no pain to worst pain imaginable PR (VAS) - no relief to complete relief Random 8 word scale Mood (VAS) Stopwatch to meaningful relief	Ibuprofen (400mg) n= 30 Placebo n= 11	Women ibuprofen 400 mg n = 20 placebo n= 6 Men ibuprofen 400 mg n= 10 placebo n= 5	Ibuprofen at both doses was significantly superior to placebo for all measures of analgesia. *6 hr TOTPAR* *calculated from the graph* Ibuprofen 400mg 9.1 Placebo 1.18 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 6 / 30 Placebo 0 / 11	161 analysed. Exclusions: 15 no pain, 10 concurrent illness, 7 analgesics within 48 hrs, 4 withdrew before study began, 4 did not attend, 3 previous NSAID allergy, 1 possible pregnancy, 1 migraine after surgery, 1 surgery cancelled, 3 remed before 45 mins
Mehlisch DR, Sollecito WA, Helfrick JF et al. Multicenter clinical trial of ibuprofen and acetaminophen in the treatment of postoperative dental pain. J Am Dent Assoc 1990; 121(2):257-63.	Various oral surgery procedures n=706 Age 18 - 64	RCT, DB, single oral dose, parallel groups. 6hr washout prior to start. Self-assessed at 0, 0.5, 1hr then hourly for up to 6 hours. Medication taken when baseline pain was of moderate to severe intensity.	PI (4pt scale)- Standard wording scale 1-4 PR (4pt scale)- Non standard	Ibuprofen (400mg) n= 306 Placebo n= 85	Women ibuprofen 400 mg n = 184 placebo n= 55 Men ibuprofen 400 mg n= 122 placebo n= 30	Ibuprofen was significantly superior for most summary measures of efficacy. *6hr SPID* Ibuprofen 5.84 Placebo 0.99 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 184 / 306 Placebo 9 / 85	697 analysed. Exclusions: 4 were lost to follow up, 4 were entered in the trial twice (1st entry only was analysed for efficacy but both were included in safety analysis) and 1 was excluded for failing to meet inclusion criteria.
Mehlisch DR, Jasper RD, Brown P, Korn SH, McCarroll K, Murakami AA. Comparative study of ibuprofen lysine and acetaminophen in patients with postoperative dental pain. Clin Ther 1995; 17:852-60.	Third Molar Extraction n= 205 Age 15 +	RCT, DB, single oral dose, parallel groups. 12 hr washout prior to start. LA. Self assessed at 0, 15, 30, 45, 60, 90 mins, 2 hrs then hourly for 6 hours. Medication taken when baseline pain was of moderate to severe intensity.	PI (4pt scale)- Standard PR (5pt scale)- Standard Global Rating (5pt scale) by patient	Ibuprofen (400mg) n= 98 Placebo n= 40	Women ibuprofen 400 mg n = 63 placebo n= 21 Men ibuprofen 400 mg n= 35 placebo n= 19	Ibuprofen was significantly superior to placebo for all measures of analgesia (p< 0.05). *6 hr TOTPAR* Ibuprofen 14.39 Placebo 2.62 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 67 / 98 Placebo 1 / 40	239 analysed. Exclusion: 1 patient only had 1 molar removed and failed to complete the diary.

Reference	Condition & No. of Patients	Trial Design, Duration & Follow Up	Study Outcome Measures	Dosing Regimen for Ibuprofen and Placebo trial arms	Details of Men and Women Participating in Ibuprofen and Placebo trial arms	Analgesic Outcome Results for Ibuprofen and Placebo	Trial Withdrawals & Exclusions
Morrison B W, Christensen S, Yuan W, Brown J, Amlani S, Seidenberg B. Analgesic efficacy of the cyclooxygenase-2-specific inhibitor rofecoxib in post-dental surgery pain: a randomized, controlled trial. Clin Ther 1999; 21(6):943-53.	Third molar extraction n= 151 Age 16+	RCT, DB, single oral dose, parallel groups. 6 hour washout prior to surgery. LA & GA. Patient assesssment at 30, 60 and 90 mins, hourly up to 8 hours and again at 12 and 24 hours. Medication taken when baseline pain was of a moderate to severe intensity.	PI (4pt) - Standard PR (5pt) - Standard Global assessment at 8 and 24 hrs Time to 'meaningful pain relief' Time to 'perceptible pain relief'	Ibuprofen (400mg) n=51 Placebo n= 50	Women ibuprofen 400 mg n = 27 placebo n= 23 Men ibuprofen 400 mg n= 24 placebo n= 28	Ibuprofen was significantly superior to placebo for all measures. *6hr TOTPAR* Ibuprofen 400mg 9.26 Placebo 4.15 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 20 / 51 Placebo 6 / 51	All patients were included.
Norholt S E, Aagaard E, Svensson P, Sindet Pedersen S. Evaluation of trismus, bite force, and pressure algometry after third molar surgery: a placebo-controlled study of ibuprofen. J Oral Maxillofac Surg 1998; 56(4):420-7; discussion 427-9.	Third molar removal n= 78 Age: 18 - 40	RCT, DB, single oral dose, parallel groups. LA. Hourly patient assessment up to 4 hours. Medication taken when pain was of at least a moderate intensity.	PI (5pt scale) - Non-standard PR (5pt scale) - Non-satndard (0= "complete" to 4= "none")	Ibuprofen (400mg) n= 26 Placebo n= 31	Women ibuprofen 400 mg n = 18 placebo n= 18 Men ibuprofen 400 mg n= 8 placebo n= 13	*4hr TOTPAR* Ibuprofen 400mg 11.7 Placebo 4.45 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 22 / 26 Placebo 8 / 31	57 analysed. One patient withdrew consent, twenty patients failed to develop sufficient pain and were excluded from the study.
Pagnoni B, Ravanelli A, Degradi L, Rossi R, Tiengo M. Clinical efficacy of ibuprofen arginine in the management of postoperative pain associated with suction termination of pregnancy. A double-blind placebo-controlled study. Clinical Drug Investigation 1996; 11(S1):27-32.	Caesarean section n= 92 Age 18+	RCT, DB, single oral dose, parallel groups. 6 hr washout prior to start. GA. Assessed in hospital at 0, 15, 30, 45, 60, 90 mins, 2 hrs then hourly for 6 hours. Medication taken when baseline pain was >55mm.	PI (VAS) -"no pain" - "unbearable pain" Global Rating (5pt scale) by patient	Ibuprofen arginine soluble (400mg) n= 30 Placebo n= 32	Women ibuprofen 400 mg n = 30 placebo n= 32 No men included	The sum of PID and the mean AUC showed ibuprofen to be significantly superior to placebo ($p<0.001$) the mean peak PID value was also significantly superior to placebo ($p<0.05$). *6hr VAS SPID from graph* Ibuprofen 181mm Placebo 65mm No of patients achieving at least 50% maxTOTPAR: Ibuprofen 13 / 30 Placebo 5 / 32	92 analysed. Exclusions: none
Schachtel B, Thoden W, Baybutt R. Ibuprofen and acetaminophen in the relief of postpartum episiotomy pain. J Clin Pharmacol 1989; 29(6):550-3.	Episiotomy n= 115 Age: 16 - 37	RCT, DB, single oral dose then multiple doses, parallel groups. 4 hr washout prior to start. Assessed in hospital at 0, 0.5, 1 then hourly for 4 hours. Medication taken when baseline pain was of moderate to severe intensity.	PI (4pt scale)- Standard PR (5pt scale)- Standard Global Rating (5pt scale) by patient	Ibuprofen (400mg) n= 36 Placebo n= 38	Women ibuprofen 400 mg n = 36 placebo n= 38 No men included	Ibuprofen was significantly superior to placebo for all measures of analgesia ($p< 0.05$) at least. *4hr TOTPAR* Ibuprofen 10.4 Placebo 5.5 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 27 / 36 Placebo 13 / 38	111 analysed. Exclusions: 4 remedicated before 1 hour
Schou Sea. Analgesic Dose-Response Relationship of Ibuprofen 50, 100, 200, and 400mg after Surgical Removal of Third Molars: A Single-Dose, Randomized, Placebo-controlled, and Double-blind Study of 304 Patients. J Clin Pharmacol 1998; 38:447-54.	Third molar extraction n= 304 Age: 24 - 27	RCT, DB, single oral dose, parallel groups. LA. 12 hr washout prior to start. Patient assessment hourly up to 6 hours. Medication taken when baseline pain was of moderate to severe intensity.	PI (5 pt scale) - Non-standard PR (5pt sclae) - Standard	Ibuprofen (400mg) n= 49 Placebo n= 56	Women ibuprofen 400 mg n = 23 placebo n= 27 Men ibuprofen 400 mg n= 26 placebo n= 29	All four ibuprofen doses were significantly superior to placebo ($P\leq 0.05$). *6hr TOTPAR* Ibuprofen 400mg 17.15 Placebo 7.3 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 41 / 49 Placebo 16 / 56	46 patients were excluded due to insufficient baseline pain, 3 withdrew (reasons not related to AE), 5 failed to attend follow-up, 5 lost self-report measure, 3 took study prohibited additional analgesia, 3 did not require surgery, 2 remedicated within 60 mins and 1 patients was excluded with concomitant surgical removal of maxillary third molar.
Seymour RA, Hawkesford JE, Weldon M, Brewster D. An evaluation of different ibuprofen preparations in the control of postoperative pain after third molar surgery. Br J Clin Pharmacol 1991; 31(1):83-7.	Third Molar Extraction n= 205 Age Adults	RCT, DB, single oral dose, parallel groups. GA. Assessed in hospital by the same observer at 0, 10, 20, 30, 45, 60, 90 mins, 2 hrs then hourly for 6 hours. Medication taken when baseline pain was >30mm.	PI (VAS) -"no pain" - "unbearable pain" Global Rating (5pt scale) by patient	**Study 1** Ibuprofen (400mg) tablets n= 31 Ibuprofen (400mg) liquid in gelatin capsules n= 32 Placebo n= 32 **Study 2** Ibuprofen (400mg) tablets n= 30 Ibuprofen (400mg) soluble n= 32 Placebo n=30	**Study 1** Women ibuprofen 400 mg n = 37 placebo n= 18 Men ibuprofen 400 mg n= 26 placebo n= 14 **Study 2** Women ibuprofen 400 mg n = 49 placebo n= 23 Men ibuprofen 400 mg n= 13 placebo n= 7	**1**: Both Ibuprofen were sig superior to placebo; no sig dif between the 2 active groups. *6hr VAS SPID* Gel 233mm Tablets 243 Placebo 120 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 42 / 63 Placebo 10 / 32 **2**: Sol Ibuprofen was sig superior to placebo from 20 mins; tablets from 30 mins. *6hr VAS SPID* Sol 228mm Tablets 214 Placebo 86 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 42 / 62 Placebo 7 / 30	187 analysed but claimed to have enrolled only 180?
Seymour R, WardBooth P, Kelly P. Evaluation of different doses of soluble ibuprofen and ibuprofen tablets in postoperative dental pain. Br J Oral Maxillofac Surg 1996; 34(1):110-4.	Third Molar Extraction n= 148 Age Adults	RCT, DB, single oral dose, parallel groups. GA. Assessed in hospital by nurse observer at 0, 10, 20, 30, 45, 60, 75, 90,120, 150 mins, 3 hrs then hourly for 6 hours. Medication taken when baseline pain was >30mm.	PI (VAS) -"no pain" - "unbearable pain" Global Rating (5pt scale) by patient	Ibuprofen (400mg) tablets n= 15 Ibuprofen (400mg) soluble n= 16 Placebo n= 19	Women ibuprofen 400 mg n = 19 placebo n= 12 Men ibuprofen 400 mg n= 12 placebo n= 7	All Ibuprofen treatments except Ibuprofen 200mg resulted in significantly less pain than placebo for all efficacy measures ($p<0.05$). *6hr VAS SPID* Ibu 400 T 258 Ibu 400 S 238 Placebo 44 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 22 / 31 Placebo 2 / 19	199 analysed. Exclusions: 4 were excluded for "unwanted effects" and 25 failed to reach a sufficient baseline pain intensity.

Reference	Condition & No. of Patients	Trial Design, Duration & Follow Up	Study Outcome Measures	Dosing Regimen for Ibuprofen and Placebo trial arms	Details of Men and Women Participating in Ibuprofen and Placebo trial arms	Analgesic Outcome Results for Ibuprofen and Placebo	Trial Withdrawals & Exclusions
Seymour R A, Frame J, Negus T W, Hawkesford J E, Marsden J, Matthew I R. The comparative efficacy of aceclofenac and ibuprofen in postoperative pain after third molar surgery. Br J Oral Maxillofac Surg 1998; 36(5):375-9.	Third molar extraction n= 258 Age 25 (median)	RCT, DB, single oral dose, parallel dose. GA. Patient assessment at 15, 30, 45, 60, 90, 120 and 150 mins then hourly up to 6 hours. Medication taken when baseline pain was of at least moderate intensity.	PI (VAS) - "no pain" - "unbearable pain" PR (VAS) - "no relief" - "complete relief" Global assessment - Non-standard (0 =complete - 4 = none)	Ibuprofen (400mg) n= 76 Placebo n= 70	Women ibuprofen 400 mg n = 36 placebo n= 38 Men ibuprofen 400 mg n= 40 placebo n= 32	AUC No of patients achieving at least 50% maxTOTPAR: Ibuprofen 34 / 76 Placebo 12 / 68	41 patients failed to reach the required pain level.
Sunshine A, Olson NZ, Laska EM, Zighelboim I, De Castro A, De Sarrazin C. Ibuprofen, zomepirac, aspirin, and placebo in the relief of postepisiotomy pain. Clin Pharmacol Ther 1983; 34(2):254-8.	Episiotomy n= 115 Age: 18+	RCT, DB, single oral dose, parallel groups. 4 hr washout prior to start. Assessed in hospital by the same observer at 0, 0.5, 1hrs then hourly for 4 hours. Medication taken when baseline pain was of moderate to severe intensity.	PI (4pt scale)- Standard PR (5pt scale)- Non-standard (percentages not descriptive wording) Global Rating of medication (4pt scale) by patient Global Rating of personal improvement (7pt scale) by patient	Ibuprofen (400mg) n= 30 placebo n= 30	Women ibuprofen 400 mg n = 30 placebo n= 30 No men included	Ibuprofen was significantly superior to placebo for all measures of analgesia from 1 hr onwards. *4hr SPID* Ibuprofen 6.47 Placebo 1.12 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 21 / 30 Placebo 3 / 30	120 analysed. Exclusions: none
Sunshine A, Roure C, Olson N, Laska EM, Zorrilla C, Rivera J. Analgesic efficacy of two ibuprofen codeine combinations for the treatment of postepisiotomy and postoperative pain. Clin Pharmacol Ther 1987; 42(4):374-80.	Episiotomy , caesarean section or gynaecological surgery n= 200 Age ?	RCT, DB, single oral dose, parallel groups. 4 hr washout prior to start. Assessed in hospital by the same observer at 0, 0.5, 1hrs then hourly for 4 hours. Medication taken when baseline pain was of moderate to severe intensity.	PI (4pt scale)- Standard PR (5pt scale)- Non-standard (percentages not descriptive wording) Global Rating of medication (4pt scale) by patient Global Rating of personal improvement (7pt scale) by patient	Ibuprofen (400mg) n= 38 Placebo n= 40	Women ibuprofen 400 mg n = 38 placebo n= 40 No men included	All active treatments were significantly superior to placebo for TOTPAR & all except Codeine for SPID. *4 hr SPID* Ibuprofen 8.1 Placebo 5.2 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 16 / 38 Placebo 11 / 40	195 analysed. Exclusions: 1 had not complied with the washout period and 4 did not complete the evaluations.
Sunshine A, Olson N Z, O'Neill E, Ramos I, Doyle R. Analgesic efficacy of a hydrocodone with ibuprofen combination compared with ibuprofen alone for the treatment of acute postoperative pain. J Clin Pharmacol 1997; 37(10):908-15.	Gynecological surgery (abdominal hysterectomy) or caesarean section n= 120 Age: 18+	RCT, DB, single oral dose, parallel groups. Patient assessment at 30 and 60 mins then hourly up to 6 hours. Medication taken when baseline pain was of moderate to severe intensity.	PI (4pt scale) - Standard PR (5pt scale) - Standard Global rating (5 pt scale) - Standard Time to onset of "meaningful pain relief"	Ibuprofen (400mg) n= 40 Placebo n= 39	Women ibuprofen 400 mg n = 40 placebo n= 39 No men included	Both treatments were significantly superior to placebo *6 hr TOTPAR* Ibuprofen 400mg 9.70 Placebo 2.68 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 17 / 40 Placebo 1 / 39	One patient from the placebo group refused to cooperate and was excluded from the study.
Wideman, G. l.; Keffer, M.; Morris, E. and others. Analgesic efficacy of a combination of hydrocodone with ibuprofen in postoperative pain. Clin Pharmacol Ther. 1999; 65:66-76.	Abdominal or gynecologic surgery n= 201 Age: 18+	RCT, DB, single oral dose, parallel groups. Patient assessment at 20, 40, 60, 80, 100 mins, 2, 2.5, 3, 4, 5, 6, 7 and (only in study II) 8 hours. Medication was taken when pain was of moderate to severe intensity.	PI (4pt scale) - Standard PR (5pt scale) - Standard Global evaluation of study medication - Standard	Ibuprofen (400mg) n= 50 Placebo n= 51	Women ibuprofen 400 mg n = 50 placebo n= 51 No men included	*6 hr TOTPAR* Ibuprofen 400mg 9.65 Placebo 2.98 No of patients achieving at least 50% maxTOTPAR: Ibuprofen 21 / 50 Placebo 3 / 51	All patients were included.
JE Edwards, HJ McQuay, RA Moore. Combination analgesic efficacy: Individual patient data meta-analysis of single dose oral tramadol plus acetaminophen in acute postoperative pain. J Pain Symptom Manage 2002; 23(2):121-30.	Third Molar Extraction n=680 Age: 16+	RCT, DB, single oral dose, parallel groups, evaluated hourly for 8 hours. Medication administered when baseline pain reached a moderate to severe intensity.	PI (4pt scale) - Standard PR (5pt scale) - Standard Global Rating (5pt scale) by patient	Ibuprofen (400 mg) n=339 Placebo n=341	Women Ibuprofen 400 mg n=193 Placebo n=215 Men Ibuprofen 400 mg n=146 Placebo n=126	No of patients achieving at least 50% maxTOTPAR: Ibuprofen Women 81 / 193 Men 81 / 146 Placebo Women 7 / 215 Men 7 / 126	Number of patients withdrawing for any reason: Ibuprofen 45 Placebo 125

RCT - randomised, controlled trial
DB - double blind
PI - pain intensity
PR - pain relief
AE - adverse events