Table G-9. Mood and cognition effects in controlled studies comparing innovator versus generic antiepileptic drugs

| Study, Year | Group | N | Mood Disorders not Reported (n) | Aggression | Anxiety | Depression | Impaired Cognition | Emotional Lability | Nervousness |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Unspecified Innovator and Brand Antiepileptic Drug Products |
| Rascati, 2009 | Cases | 991 | - | - | - | - | - | - | - |
| Controls | 2973 | - | - | - | - | - | - | - |
| Zachry, 2009 | Cases | 416 | - | - | - | - | - | - | - |
| Controls | 1248 | - | - | - | - | - | - | - |
| Devine, 2010 | Cases | 2949 | - | - | - | - | - | - | - |
| Controls | 8847 | - | - | - | - | - | - | - |
| Labiner, 2010a | Branded carbamazepine, gabapentin, phenytoin, primidone, zonisamide (manufacturer not reported) | 18,125 | - | - | - | - | - | - | - |
| Carbamazepine, gabapentin, phenytoin, primidone, zonisamide (manufacturer not reported) |  | - | - | - | - | - | - | - |
| Labiner, 2010b | Branded carbamazepine, gabapentin, phenytoin, primidone, zonisamide (manufacturer not reported) | 15,500 | - | - | - | - | - | - | - |
| Carbamazepine, gabapentin, phenytoin, primidone, zonisamide (manufacturer not reported) |  | - | - | - | - | - | - | - |
| Carbamazepine |
| Kauko, 1974a | Tegretol (Ciba-Geigy) Tablets | 10 | - | - | - | - | - | - | - |
| Generic Carbamazepine (Laake Oy) Tablets |  | - | - | - | - | - | - | - |
| Kauko, 1974b | Tegretol (Ciba-Geigy) Tablets | 10 | - | - | - | - | - | - | - |
| Generic Carbamazepine (Laake Oy) Tablets |  | - | - | - | - | - | - | - |

| Table G-9. Mood and cognition effects in controlled studies comparing innovator versus generic antiepileptic drugs (continued) |
| --- |
| Study, Year | Group | N | Mood Disorders not Reported (n) | Aggression | Anxiety | Depression | Impaired Cognition | Emotional Lability | Nervousness |
| Glende, 1983 | Tegretol (Ciba-Geigy) Tablets | 5 | - | - | - | - | - | - | - |
| Carbamazepine (AWD Dresden) Tablets |  | - | - | - | - | - | - | - |
| Jumao-as, 1989 | Tegretol (Ciba-Geigy) Tablets | 10 | - | - | - | - | - | - | - |
| Generic Carbamazepine (Parke Davis) Tablets |  | - | - | - | - | - | - | - |
| Hartley, 1990 | Tegretol (Ciba-Geigy) | 23 | 1 | - | - | - | - | - | - |
| Carbamazepine (Ethical Generics) |  | 1 | - | - | - | - | - | - |
| Hartley, 1991 | Tegretol (Ciba-Geigy) Tablets | 12 | - | - | - | - | - | - | - |
| Carbamazepine (Ethical Generics) Tablets |  | - | - | - | - | - | - | - |
| Oles, 1992a | Tegretol (Ciba-Geigy) Tablets | 20 | - | - | - | - | - | - | - |
| Carbamazepine (Lemmon Co) Tablets |  | - | - | - | - | - | - | - |
| Oles, 1992b | Tegretol (Ciba-Geigy) Tablets | 20 | - | - | - | - | - | - | - |
| Carbamazepine (Lemmon Co) Tablets |  | - | - | - | - | - | - | - |
| Reunanen, 1992 | Tegretol Retard (Ciba-Geigy) Tablets | 20 | - | - | - | - | - | - | - |
| Carbamazepine (Laakefarmos) Tablets |  | - | - | - | - | - | - | - |
| Silpakit, 1997 | Tegretol (Ciba-Geigy) Tablets | 18 | - | - | - | - | - | - | - |
| Carbamazepine (Central Poly) Tablets |  | - | - | - | - | - | - | - |
| Carbamazepine (Condrugs) Tablets |  | - | - | - | - | - | - | - |
| Carbamazepine (Pharmaland) Tablets |  | - | - | - | - | - | - | - |
| Aldenkamp, 1998 | Tegretol (Ciba-Geigy) Tablets | 12 | - | - | - | - | Finger Tapping (number of taps): 67.7 (8.7)Visual Reaction Time (ms): 274.0 (36.4)Binary Choice Reaction Time (ms): 364.1 (41.5)Visual Searching Task (s): 9.3 (1.9)Recognition Task (number out of 24): 20.2 (1.5)Neurotoxicity Scale: 6.75 (5.6) | - | - |
| Generic (Pharmachemie) Tablets | 12 | - | - | - | - | Finger Tapping (number of taps): 64.8 (8.2)Visual Reaction Time (ms): 312.0 (76.0)Binary Choice Reaction Time (ms): 415.5 (58.3)Visual Searching Task (s): 7.5 (2.0)Recognition Task (number out of 24): 20.4 (3.2)Neurotoxicity Scale: 13.8 (12.8) | - | - |
| Aldenkamp, 1998 (continued) | Generic (Pharbita) Tablets | 12 | - | - | - | - | Finger Tapping (number of taps): 62.5 (3.6)Visual Reaction Time (ms): 287.1 (47.6)Binary Choice Reaction Time (ms): 384.9 (44.3)Visual Searching Task (s): 7.8 (3.6)Recognition Task (number out of 24): 19.7 (2.1)Neurotoxicity Scale: 2.92 (2.7) | - | - |
| Garnett, 2005 | Tegretol (Novartis) Tablets | 275 | - | - | - | - | - | - | - |
| Generic (Various/Unspecified) Tablets | 705 | - | - | - | - | - | - | - |
| LeLorier, 2008d | Tegretol CR (manufacturer not reported) | 851 | - | - | - | - | - | - | - |
| Carbamazepine CR (manufacturer not reported) |  | - | - | - | - | - | - | - |
| Clobazam |
| Andermann, 2007b | Frisium (manufacturer not reported) | 1600 | - | - | - | - | - | - | - |
| Clobazam (manufacturers not reported) |  | - | - | - | - | - | - | - |
| LeLorier, 2008b | Frisium (manufacturer not reported) | 1060 | - | - | - | - | - | - | - |
| Clobazam (manufacturer not reported) |  | - | - | - | - | - | - | - |
| Gabapentin |
| LeLorier, 2008c | Neurontin (manufacturer not reported) | 202 | - | - | - | - | - | - | - |
| Gabapentin (manufacturer not reported) |  | - | - | - | - | - | - | - |
| Lamotrigine |
| Andermann, 2007a | Lamictal (GlaxoSmithKline) | 1142 | - | - | - | - | - | - | - |
| Lamotrigine (manufacturers not reported) |  | - | - | - | - | - | - | - |
| LeLorier, 2008a | Lamictal (GlaxoSmithKline)  | 671 | - | - | - | - | - | - | - |
| Lamotrigine (manufacturer(s) not reported) |  | - | - | - | - | - | - | - |
| Nielsen, 2008a | Lamictal | 9 | - | - | - | - | - | - | - |
| Lamotrigine (Copyform, Hexal, Ratiofarm, Ratiopharm, Farma, Actavis, Stada) |  | - | - | - | - | - | - | - |
| Levetiracetam, Oxcarbazepine, Phenobarbital or Primidone, Phenytoin |
| Lund, 1974 | Epanutin (Parke-Davis) capsules | 9 | - | - | - | - | - | - | - |
| Phenytoin sodium (Leo) capsules |  | - | - | - | - | - | - | - |
| Chen, 1982 | Epanutin (Parke-Davis) capsules | 18 | - | - | - | - | - | - | - |
| Phenytoin sodium (Boots) tablets |  | - | - | - | - | - | - | - |
| Phenytoin sodium (Cox) tablets |  | - | - | - | - | - | - | - |
| Phenytoin sodium (Kerfoot) tablets |  | - | - | - | - | - | - | - |
| Phenytoin sodium (McCarthy UK) tablets |  | - | - | - | - | - | - | - |
| Hodges, 1986 | Phenytoin (Parke-Davis) capsules | 19 | - | - | - | - | - | - | - |
| Phenytoin (Boots) tablets |  | - | - | - | - | - | - | - |
| Phenytoin (Evans) tablets |  | - | - | - | - | - | - | - |
| Kishore, 1986 | Dilantin (Parke-Davis, India) capsules  | 15 | - |  |  |  |  |  |  |
| Phenytoin (Epsolin, Cadila) tablets  | 15 | - |  |  |  |  |  |  |
| Phenytoin (Eptoin, Boots India) tablets  | 15 | - |  |  |  |  |  |  |
| Phenytoin (Epileptin, Indian Drugs and Pharmaceuticals) capsules | 15 | - |  |  |  |  |  |  |
| Mikati, 1992 | Dilantin (Parke-Davis) capsules | 10 | - | - | - | - | - | - | - |
| Phenytoin (Phenytex, manufacturer not reported) capsules |  | - | - | - | - | - | - | - |
| Soryal, 1992 | Epanutin (Parke-Davis) capsules | 14 | - | - | - | - | - | - | - |
| Phenytoin sodium (Evans) tablets |  | - | - | - | - | - | - | - |
| Phenytoin sodium (APS) tablets |  | - | - | - | - | - | - | - |
| Phenytoin sodium (Cox) tablets |  | - | - | - | - | - | - | - |
| Phenytoin sodium (Kerfoot) tablets |  | - | - | - | - | - | - | - |
| Phenytoin sodium (Regent) tablets |  | - |  |  |  |  |  |  |
| Topiramate |
| Duh, 2009 | Topamax (Ortho-McNeil) | 875 | - | - | - | - | - | - | - |
| Topiramate (Various manufacturers) – Single Product Users | 331 | - | - | - | - | - | - | - |
| Topiramate (Various manufacturers) – Multiple Product Users | 99 | - | - | - | - | - | - | - |
| Paradis, 2009b | Topamax (Ortho-McNeil) | - | - | - | - | - | - | - | - |
| Topiramate (Various manufacturers) | - | - | - | - | - | - | - | - |
| Valproic Acid |
| Vadney, 1997 | Depakene (Abbott) | 64 |  | - | - | - | - | - | - |
| Valproic acid (Solvay) |  |  | - | - | - | - | - | - |
| Andermann, 2007c | Depakene (manufacturer not reported) | 2017 | - | - | - | - | - | - | - |
| Valproic Acid (manufacturers not reported) |  | - | - | - | - | - | - | - |

- = not reported; N = sample size; n = number of events