Table I-16. Strength of applicability for neurologic adverse events for newer versus older antiepileptic drugs

| Outcome | Older AED | Newer AEDs | Strength of Applicability | Conclusion With Description of Applicability |
| --- | --- | --- | --- | --- |
| Headache | Carbamazepine | Gabapentin  Lamotrigine  Oxcarbazepine  Topiramate  Vigabatrin | Moderate | Compared with carbamazepine, newer antiepileptic drugs did not decrease the incidence of headache. Overall applicability is limited because multiple newer antiepileptics were compared to carbamazepine. Applicability is limited to the United States population because the majority of the trials included in the evaluation were conducted in Europe. |
| Headache | Carbamazepine Controlled or Sustained Release | Lamotrigine  Levetiracetam | Low | Compared with controlled or sustained release carbamazepine, newer antiepileptic drugs did not decrease the incidence of headache. Overall applicability is limited because multiple newer antiepileptic drugs are compared to controlled or sustained release carbamazepine. Applicability to a United States population is limited because the trials included in the analysis were conducted in Scandinavia, Europe, and South Africa. Applicability is also limited to a pediatric and adult population because one of the trials included in the analysis was conducted in patients 65 years of age or older. |
| Headache | Phenytoin | Lamotrigine Oxcarbazepine  Topiramate | Moderate | Compared with phenytoin, newer antiepileptic drugs did not decrease the incidence of headache. Overall applicability is limited because multiple newer antiepileptic drugs were compared to phenytoin. Applicability to a United States population is limited because only one of the trials included in the analysis was conducted in the United States while the rest were conducted in Europe, South America, and South Africa. |
| Headache | Valproic Acid | Felbamate  Lamotrigine  Oxcarbazepine  Topiramate | Moderate | Compared with valproic acid, newer antiepileptic drugs did not decrease the incidence of headache. Overall applicability is limited because multiple newer antiepileptic drugs were compared to valproic acid. |
| Headache | Ethosuximide | Lamotrigine | Low | Compared with ethosuximide, lamotrigine did not decrease the incidence of headache. Applicability is limited because the trial was conducted in patients between the ages of 2.5 and 13 years. |
| Fatigue | Carbamazepine | Gabapentin  Lamotrigine  Oxcarbazepine  Topiramate  Vigabatrin | Moderate | Compared with carbamazepine, newer antiepileptic drugs decrease the incidence of headache. Overall applicability is limited because multiple newer antiepileptic drugs were compared to carbamazepine. Applicability to a patient population in the United States is limited because the majority of the trials included in the evaluation were conducted in Europe. |
| Fatigue | Carbamazepine Controlled Release | Levetiracetam | Low | Compared with controlled release carbamazepine, levetiracetam did not decrease the incidence of fatigue. Overall applicability to a patient population in the United States is limited because the trial was conducted in Europe and South Africa. Applicability to a pediatric patient population is limited because the trial enrolled patients 16 years of age and older. |

| Table I-16. Strength of applicability for neurologic adverse events for newer versus older antiepileptic drugs (continued) | | | | |
| --- | --- | --- | --- | --- |
| Outcome | Older AED | Newer AEDs | Strength of Applicability | Conclusion With Description of Applicability |
| Fatigue | Phenytoin | Topiramate | Low | Compared with phenytoin, topiramate did not decrease the incidence of headache. Applicability to a pediatric patient population is limited because the trial enrolled patients 12 years of age and older. |
| Fatigue | Valproic Acid | Felbamate  Lamotrigine  Oxcarbazepine  Topiramate | Moderate | Compared with valproic acid, newer antiepileptic drugs decreased the incidence of fatigue. Overall applicability is limited because multiple newer antiepileptic drugs were compared to valproic acid. |
| Fatigue | Ethosuximide | Lamotrigine | Low | Compared with ethosuximide, lamotrigine decreased the incidence of headache. Applicability is limited because the trial was conducted in patients between the ages of 2.5 and 13 years. |
| Somnolence | Carbamazepine | Gabapentin  Lamotrigine  Levetiracetam  Topiramate  Vigabatrin | Moderate | Compared with carbamazepine, newer antiepileptic drugs decreased the incidence of somnolence. Overall applicability is limited because multiple newer antiepileptic drugs were compared to carbamazepine. Applicability to a United States population is limited because only three of the trials included in the analysis was conducted in the United States while the rest were conducted in Europe, China, and South Africa. |
| Somnolence | Carbamazepine Controlled Release | Levetiracetam | Low | Compared with controlled release carbamazepine, levetiracetam did not reduce the incidence of somnolence. Applicability to a patient population in the United States is limited because the trial was conducted in Europe and South Africa. Applicability to a pediatric population is limited because the trial was conducted in adolescents and adults 16 years of age and above. |
| Somnolence | Phenytoin | Lamotrigine  Oxcarbazepine  Topiramate | Moderate | Compared with phenytoin, newer antiepileptic drugs did not reduce the incidence of somnolence. Overall applicability is limited because multiple newer antiepileptic drugs were compared to phenytoin. Applicability to a United States population is limited because only one of the trials included in the analysis was conducted in the United States while the rest were conducted in Europe, South America and South Africa. |
| Somnolence | Valproic Acid | Felbamate  Lamotrigine  Oxcarbazepine  Topiramate | Moderate | Compared with valproic acid, newer antiepileptic drugs reduced the incidence of somnolence. Overall applicability is limited because multiple newer antiepileptic drugs were compared to valproic acid. |
| Somnolence | Ethosuximide | Lamotrigine | Low | Compared with ethosuximide, lamotrigine decreased the incidence of somnolence. Applicability is limited because the trial was conducted in patients between the ages of 2.5 and 13 years. |
| Dizziness | Carbamazepine | Gabapentin  Lamotrigine  Levetiracetam  Oxcarbazepine  Topiramate  Vigabatrin | Moderate | Compared with carbamazepine, newer antiepileptic drugs decreased the incidence of dizziness. Overall applicability is limited because multiple newer antiepileptic drugs were compared to carbamazepine. |
| Dizziness | Carbamzepine Controlled or Sustained Release | Lamotrigine  Levetiracetam | Low | Compared with controlled or sustained release carbamazepine, newer antiepileptic drugs did not decrease the incidence of dizziness. Overall applicability is limited because multiple newer antiepileptic drugs are compared to controlled or sustained release carbamazepine. Applicability to a United States population is limited because the trials included in the analysis were conducted in Scandinavia, Europe and South Africa. Applicability is also limited to a pediatric and adult population because one of the trials included in the analysis was conducted in patients 65 years of age or older. |
| Dizziness | Phenytoin | Lamotrigine  Oxcarbazepine | Moderate | Compared with phenytoin, newer antiepileptic drugs did not decrease the incidence of dizziness. Overall applicability is limited because multiple newer antiepileptic drugs were compared to phenytoin. Applicability to a patient population in the United States is limited because the trials included in the analysis were conducted in Europe and South America. |
| Dizziness | Valproic Acid | Felbamate  Lamotrigine  Oxcarbazepine  Topiramate | Moderate | Compared with valproic acid, newer antiepileptic drugs did not decrease the incidence of dizziness. Overall applicability is limited because multiple newer antiepileptic drugs were compared to valproic acid. |
| Dizziness | Ethosuximide | Lamotrigine | Low | Compared with ethosuximide, lamotrigine did not decrease the incidence of dizziness. Applicability is limited because the trial was conducted in patients between the ages of 2.5 and 13 years. |

AED = antiepileptic drug