

**Headache  
EVIDENCE TABLE**

Reference	Study Type	Patients/ Events	Study Objective (Purpose of Study)	Study Results	Strength of Evidence
1. Abu-Arefeh I, Russell G. Prevalence of headache and migraine in schoolchildren. <i>BMJ</i> 1994; 309(6957):765-769.	3b	2,165	To assess the prevalence of migraine in a random sample of the entire childhood population of a single city, employing the International Headache Society (IHS) criteria and validating the questionnaire responses with clinical interviews.	<ul style="list-style-type: none"> <li>The prevalence rates of migraine and tension headache were 10.6% (95% CI: 9.1-12.3) and 0.9% (0.5-1.5) respectively.</li> <li>The prevalence rates for migraine without aura and migraine with aura were 7.8% (95% CI: 6.5-9.3) and 2.8% (2.0-3.8) respectively.</li> </ul>	2
2. Brattberg G. The incidence of back pain and headache among Swedish school children. <i>Qual Life Res</i> 1994; 3 Suppl 1:S27-31.	3a	1,245	To assess the prevalence of headache among school children.	48% of the students reported headache. In all age groups studied, headaches were more common among girls than boys. In a longitudinal study 471 schoolchildren were asked a second time 2 years later. 30% reported headache in both surveys.	3
3. Gobel H, Petersen-Braun M, Soyka D. The epidemiology of headache in Germany: a nationwide survey of a representative sample on the basis of the headache classification of the International Headache Society. <i>Cephalalgia</i> 1994; 14(2):97-106.	3b	5,000	To determine the prevalence of headache syndromes defined according to the IHS criteria, in a large representative sample of the German population.	Reported a history of headache: 71.4% (migraine: 27.5%; tension-type headache: 38.3%; Other headache: 5.6%).	2
4. Wong TW, Wong KS, Yu TS, Kay R. Prevalence of migraine and other headaches in Hong Kong. <i>Neuroepidemiology</i> 1995; 14(2):82-91.	3b	7,356	To determine the prevalence of headache in the Hong Kong population.	Overall prevalence rates were 1% for migraine, 2% for tension-type headache and 1% for unclassified headache. Adjusted for misclassification and non-response, the estimated prevalence rates for the three categories were 1.5%, 3% and 0.4%, respectively.	2
5. Lipton RB, Stewart WF. The epidemiology of migraine. <i>Eur Neurol</i> 1994; 34 Suppl 2:6-11.	11	N/A	To review migraine prevalence.	Studies using IHS diagnostic criteria have given relatively consistent estimates of migraine prevalence (about 15%-18% of women and 6% of men) and indicate that migraine occurs most commonly in men and women aged 25-55 years.	3
6. Kryst S, Scherl E. A population-based survey of the social and personal impact of headache. <i>Headache</i> 1994; 34(6):344-350.	3b	647	To explore the social and personal impact of headache.	The 12-month period prevalence for all serious headaches was 13.4%; for migraine, it was 8.5%.	3

**Headache  
EVIDENCE TABLE**

Reference	Study Type	Patients/ Events	Study Objective (Purpose of Study)	Study Results	Strength of Evidence
7. Merikangas KR, Whitaker AE, Isler H, Angst J. The Zurich Study: XXIII. Epidemiology of headache syndromes in the Zurich cohort study of young adults. <i>Eur Arch Psychiatry Clin Neurosci</i> 1994; 244(3):145-152.	3b	N/A	To examine the 1-year prevalence rates of headache syndromes in young adults ages 29-30.	The 1-year prevalence rates were 3.3% for migraine with aura and 21.3% of migraine without aura.	3
8. Cruz ME, Cruz I, Preux PM, Schantz P, Dumas M. Headache and cysticercosis in Ecuador, South America. <i>Headache</i> 1995; 35(2):93-97.	3b	2,723	To determine the prevalence of headache and the yield of CT in a population with endemic neurocysticercosis.	The prevalence of headache was low (68.7 per thousand for migraine headaches and 28.3 per thousand for tension headache). Fifty-seven migraine sufferers accepted CT examination, and in 19 it revealed neurocysticercosis. Of a random sample of 109 headache-free subjects examined by CT, 14 were positive for cysticercosis. A statistically significant difference between the symptom-free general population and the migraine patients was obtained for CT findings (odds ratio 3.39, P<0.005).	2
9. O'Brien B, Goeree R, Streiner D. Prevalence of migraine headache in Canada: a population-based survey. <i>Int J Epidemiol</i> 1994; 23(5):1020-1026.	3b	2,922	To estimate the prevalence of migraine headache among Canadian adults (aged ≥18 years), using the IHS classification.	The prevalence of migraines, headaches and non-headaches among males was 7.8%, 76.1%, and 16.1%, respectively and among females was 24.9%, 65.6%, and 9.4%, respectively.	2
10. Russell MB, Rasmussen BK, Thorvaldsen P, Olesen J. Prevalence and sex-ratio of the subtypes of migraine. <i>Int J Epidemiol</i> 1995; 24(3):612-618.	3b	3,028	To provide the prevalence and sex-ratio in Denmark of subtypes of migraine diagnosed by neurological interview according to the criteria of the IHS.	Lifetime prevalence of migraine without aura, migraine with aura, migraine aura without headache, and migrainous disorder were 8%, 4%, 1% and 1% in males and 16%, 7%, 3% and 2% in females.	2
11. van de Ven RC, Kaja S, Plomp JJ, Frants RR, van den Maagdenberg AM, Ferrari MD. Genetic models of migraine. <i>Arch Neurol</i> 2007; 64(5):643-646.	12	N/A	To review genetic migraine models.	Genetic migraine models will be help reveal the triggering mechanisms for migraine attacks and identify novel migraine prophylactic targets and therapies.	4
12. Forsyth PA, Posner JB. Headaches in patients with brain tumors: a study of 111 patients. <i>Neurology</i> 1993; 43(9):1678-1683.	13	111	To characterize brain tumor headache in patients with primary or metastatic brain tumors identified by CT or MRI.	Headaches were present in 48%, equally for primary and metastatic brain tumors. Headaches were similar to tension-type in 77%, migraine-type in 9%, and other types in 14%. The typical headache was bifrontal but worse ipsilaterally, and was the worst symptom in only 45% of patients.	2

**Headache  
EVIDENCE TABLE**

Reference	Study Type	Patients/ Events	Study Objective (Purpose of Study)	Study Results	Strength of Evidence
13. Purdy RA, Kirby S. Headaches and brain tumors. <i>Neurol Clin</i> 2004; 22(1):39-53.	12	N/A	To review headaches and brain tumors.	Imaging of headache patients for tumors, if they have primary headache disorders, such as migraine and typical cluster, generally is not cost effective but is necessary if there are any atypical features.	4
14. Suwanwela N, Phanthumchinda K, Kaoropthum S. Headache in brain tumor: a cross-sectional study. <i>Headache</i> 1994; 34(7):435-438.	3b	171	To determine the prevalence and clinical profiles of headache in patients with brain tumor.	The prevalence of headache was 71%. The duration of headache ranged from 3 days to 10 years with an average of 15.7 months. Most prominent headache profiles in this series were intermittent, nocturnal and early morning headache as well as headache upon arising.	3
15. The epidemiology of headache among children with brain tumor. Headache in children with brain tumors. The Childhood Brain Tumor Consortium. <i>J Neurooncol</i> 1991; 10(1):31-46.	15	3,291	To determine the frequency of headache in the presentation of brain tumors in children.	Overall, 62% of the children with brain tumors experienced chronic or frequent headaches prior to their first hospitalization: 58% of children with supratentorial tumors and 70% of children with infratentorial tumors.	2
16. Jordan JE, Ramirez GF, Bradley WG, Chen DY, Lightfoote JB, Song A. Economic and outcomes assessment of magnetic resonance imaging in the evaluation of headache. <i>J Natl Med Assoc</i> 2000; 92(12):573-578.	10	328	Retrospective review to determine the diagnostic and cost utility of MRI in patients with non-acute headache and non-focal neurologic examinations.	5 (1.5%) had clinically significant findings. The cost per clinically significant case detected was \$34,535 (1996 dollars).	2
17. Tsushima Y, Endo K. MR imaging in the evaluation of chronic or recurrent headache. <i>Radiology</i> 2005; 235(2):575-579.	10	306	Retrospective chart review and literature review to determine the likelihood of MRI depicting an abnormality in patients with chronic headache and no neurologic abnormality.	<ul style="list-style-type: none"> <li>• Two (0.7%) had clinically significant MRI findings. 169 (55.2%) had no abnormalities and 135 (44.1%) had minor or incidental findings.</li> <li>• MRI is an unrewarding technique in the evaluation of patients with chronic or recurrent headache and normal neurologic findings.</li> </ul>	2
18. Becker LA, Green LA, Beaufait D, Kirk J, Froom J, Freeman WL. Use of CT scans for the investigation of headache: a report from ASPN, Part 1. <i>J Fam Pract</i> 1993; 37(2):129-134.	13	293	Prospective review to provide information about the reasons for ordering CT scans and the results obtained.	CT scans were ordered because the clinician believed that a tumor (49%) or a subarachnoid hemorrhage (SAH) (9%) might be present. Fifty-nine (17%) were ordered because of patient expectation or medicolegal concerns. Of the 293 reports reviewed, 14 indicated that a tumor, and SAH, or an SDH was present. Two of the 14 (14%) were false positives. Forty-four (15%) of the reports noted incidental findings of questionable significance.	3

**Headache  
EVIDENCE TABLE**

Reference	Study Type	Patients/ Events	Study Objective (Purpose of Study)	Study Results	Strength of Evidence
19. Frishberg BM. The utility of neuroimaging in the evaluation of headache in patients with normal neurologic examinations. <i>Neurology</i> 1994; 44(7):1191-1197.	12	N/A	To review literature to determine usefulness of neuroimaging in evaluating headache patients with normal neurologic examinations.	<ul style="list-style-type: none"> <li>CT or MRI may be indicated in patients with atypical headache patterns, a history of seizures or focal neurologic signs.</li> <li>Insufficient evidence to define the role of CT and MRI in the evaluation of patients with headaches that are inconsistent with migraine.</li> </ul>	4
20. Mitchell CS, Osborn RE, Grosskreutz SR. Computed tomography in the headache patient: is routine evaluation really necessary? <i>Headache</i> 1993; 33(2):82-86.	10	350	To determine the likelihood of a positive CT in the routine evaluation of headache patients, consecutive patients with a chief complaint of headache (some with neurological findings) were prospectively evaluated with CT.	Seven (2%) of the 350 patients had CT findings that were clinically significant. An additional 25 (7%) had positive but insignificant CT findings. All of the patients with significant CT findings had an abnormal physical or neurologic exam or unusual clinical symptoms.	3
21. Osborn RE, Alder DC, Mitchell CS. MR imaging of the brain in patients with migraine headaches. <i>AJNR Am J Neuroradiol</i> 1991; 12(3):521-524.	10	41	To determine the frequency of areas of high intensity with the use of MRI in patients with migraine headaches.	Frequency of foci of high intensity seen on long TR sequences in the migraine patient is much lower than previously reported.	3
22. Weingarten S, Kleinman M, Elperin L, Larson EB. The effectiveness of cerebral imaging in the diagnosis of chronic headache. <i>Arch Intern Med</i> 1992; 152(12):2457-2462.	10	89	Retrospective study with a 15-27 month follow-up period to measure the usefulness of cerebral imaging in patients with chronic isolated headache.	None of the scans provided important new information (95%, CI: 0%-3%). Long-term patient follow-up confirmed that this low yield could not be attributed to diagnostic workup bias.	3
23. Akpek S, Arac M, Atilla S, Onal B, Yucel C, Isik S. Cost-effectiveness of computed tomography in the evaluation of patients with headache. <i>Headache</i> 1995; 35(4):228-230.	15	592	Retrospective review to determine the cost-effectiveness of cranial CT in patients with headache without neurological findings.	None of the patients had findings that either explained the reason for headache or changed the clinical or therapeutic approach.	3
24. Cull RE. Investigation of late-onset migraine. <i>Scott Med J</i> 1995; 40(2):50-52.	13	69	Prospective study to determine whether routine examination of patients with late-onset migraine is of value.	Routine detailed investigation of late-onset migraine is unlikely to be of value unless the history is atypical or abnormalities are present on clinical examination.	3
25. Demaerel P, Boelaert I, Wilms G, Baert AL. The role of cranial computed tomography in the diagnostic work-up of headache. <i>Headache</i> 1996; 36(6):347-348.	10	363	Retrospective studies to assess the value of cranial CT in the diagnosis of headache.	Normal examinations were 88.4 % but advocates the routine use of a cranial CT in every patient with chronic headache.	3

**Headache  
EVIDENCE TABLE**

Reference	Study Type	Patients/ Events	Study Objective (Purpose of Study)	Study Results	Strength of Evidence
26. Dumas MD, Pexman JH, Kreeft JH. Computed tomography evaluation of patients with chronic headache. <i>Cmaj</i> 1994; 151(10):1447-1452.	10	373	To determine whether the rate of detecting a tumor, arteriovenous malformation (AVM) or aneurysm with the use of enhanced or unenhanced CT is significant in patients with chronic headache and to calculate the cost.	Four scans (95%, CI: 0%-8%) showed significant lesions: osteoma (2), low-grade glioma (1) and aneurysm (1). Only the aneurysm was treated. An unenhanced scan cost \$82.63 and an enhanced scan \$204.05. The cost per significant finding was over \$18,000. In all, it cost \$74,243 to find one treatable vascular lesion.	2
27. Maytal J, Bienkowski RS, Patel M, Eviatar L. The value of brain imaging in children with headaches. <i>Pediatrics</i> 1995; 96(3 Pt 1):413-416.	13	78	Retrospective chart review to determine the value of performing CT on MRI studies in children with chronic headaches.	No relevant abnormalities were found in this series of 78 brain imaging studies indicating that the maximal rate at which such abnormalities might appear in this population is 3.8%.	3
28. McAbee GN, Siegel SE, Kadakia S, Cantos E. Value of MRI in pediatric migraine. <i>Headache</i> 1993; 33(3):143-144.	10	24	Prospective review to determine incidence of MRI abnormalities in children with migraine.	Five had mucoperiosteal thickening of the paranasal sinuses, which were unrelated to the patients' clinical course.	4
29. Sotaniemi KA, Rantala M, Pyhtinen J, Myllyla VV. Clinical and CT correlates in the diagnosis of intracranial tumours. <i>J Neurol Neurosurg Psychiatry</i> 1991; 54(7):645-647.	9	1,191	Prospective study to examine the correlation between clinical and CT findings in cerebral tumors.	<ul style="list-style-type: none"> <li>• Specificity of CT for neoplastic tumours was 86% (32 of 37).</li> <li>• A cerebral tumor was found in 1% (2 of 207) investigated for headache without clinical signs.</li> </ul>	2
30. Reinus WR, Erickson KK, Wippold FJ, 2nd. Unenhanced emergency cranial CT: optimizing patient selection with univariate and multivariate analyses. <i>Radiology</i> 1993; 186(3):763-768.	9	1,074	To review charts of patients who underwent cranial CT for predictors of a CT abnormality.	Headache was associated with a low risk of a CT abnormality.	3
31. Aurora SK. Imaging chronic daily headache. <i>Curr Pain Headache Rep</i> 2003; 7(3):209-211.	12	N/A	To review literature on imaging studies performed on daily headache with emphasis on the new imaging technology.	No results.	4
32. Cohen AS, Goadsby PJ. Functional neuroimaging of primary headache disorders. <i>Curr Neurol Neurosci Rep</i> 2004; 4(2):105-110.	12	N/A	To review functional imaging studies in migraine, cluster headache, rarer headache syndromes, and experimental head pain.	Together with new techniques, functional imaging plays a role in primary headache syndromes.	3
33. Medina LS, D'Souza B, Vasconcellos E. Adults and children with headache: evidence-based diagnostic evaluation. <i>Neuroimaging Clin N Am</i> 2003; 13(2):225-235.	12	N/A	To review imaging tests for headache.	The sensitivity of MRI appears to be less than CT for SAH. Contrast-enhanced MRI is the examination of choice for brain metastatic lesions <2 cm. CT angiography and MR angiography have sensitivities greater than 85% for brain aneurysms >5 mm.	3

**Headache  
EVIDENCE TABLE**

Reference	Study Type	Patients/ Events	Study Objective (Purpose of Study)	Study Results	Strength of Evidence
34. Sandrini G, Friberg L, Janig W, et al. Neurophysiological tests and neuroimaging procedures in non-acute headache: guidelines and recommendations. <i>Eur J Neurol</i> 2004; 11(4):217-224.	12	N/A	Evaluation of neurophysiological tests and imaging procedures in non-acute headache patients.	Atypical headache patterns, a history of seizures and/or focal neurological signs or symptoms, MRI may be indicated. Standard headache classification, PET or SPECT scan will generally be of no further diagnostic value. Transcranial Doppler examination is not helpful in headache diagnosis.	3
35. Linn FH, Wijdicks EF, van der Graaf Y, Weerdesteyn-van Vliet FA, Bartelds AI, van Gijn J. Prospective study of sentinel headache in aneurysmal subarachnoid haemorrhage. <i>Lancet</i> 1994; 344(8922):590-593.	13	148	To study the characteristics of sentinel headache preceding SAH.	SAH was the cause of sudden, severe headache in 37 patients (25%). Other serious neurological conditions [determine] were diagnosed in 18. In the remaining 93, no underlying cause of headache was found; follow-up over 1 year showed no subsequent SAH or sudden death. Acute, severe headache in general practice indicated a serious neurological disorder in 37% (95%, CI: 29%-45%), and SAH in 25% (18%-32%). 12% (5%-18%) of those with headache as the only symptom.	3
36. Lledo A, Calandre L, Martinez-Menendez B, Perez-Sempere A, Portera-Sanchez A. Acute headache of recent onset and subarachnoid hemorrhage: a prospective study. <i>Headache</i> 1994; 34(3):172-174.	13	27	Prospective study to determine the frequency of SAH in patients coming to the emergency room with acute severe headache.	CT disclosed subarachnoid bleeding in 4 patients and spinal tap revealed subarachnoid haemorrhage in 5 patients with normal CT scan, for a total of 33% with SAH.	3
37. van der Wee N, Rinkel GJ, Hasan D, van Gijn J. Detection of subarachnoid haemorrhage on early CT: is lumbar puncture still needed after a negative scan? <i>J Neurol Neurosurg Psychiatry</i> 1995; 58(3):357-359.	10	175	To determine incidence of subarachnoid haemorrhage, patients with sudden headache and a normal neurological examination who had first CT within 12 hours after the onset of headache were investigated.	CT showed subarachnoid blood in 117 patients, and was normal in 58. Two of these 58 had SAH diagnosed by lumbar puncture.	2
38. Bioussé V, D'Anglejan-Chatillon J, Massiou H, Bousser MG. Head pain in non-traumatic carotid artery dissection: a series of 65 patients. <i>Cephalalgia</i> 1994; 14(1):33-36.	9	65	To assess the prevalence and characteristics of cephalic pain in internal carotid artery (ICA) dissection, and to compare clinical and angiographic features of patients with painful and non-painful dissections.	Forty-eight patients (74%) complained of a cephalic pain which was inaugural in 38 (58.5%). Signs of cerebral or retinal ischemia were observed in 79% of patients, often delayed and occurring up to 29 days after the onset of pain. A painful Horner's syndrome was present in 31% of patients, and was the only manifestation of dissection in 16%.	3

**Headache  
EVIDENCE TABLE**

Reference	Study Type	Patients/ Events	Study Objective (Purpose of Study)	Study Results	Strength of Evidence
39. Silbert PL, Mokri B, Schievink WI. Headache and neck pain in spontaneous internal carotid and vertebral artery dissections. <i>Neurology</i> 1995; 45(8):1517-1522.	3b	161	To determine the characteristics of headaches in patients with spontaneous dissections of the ICA (n=135) or the vertebral artery (VAD) (n=26).	A history of migraine was present in 18% of the ICA group and in 23% of the VAD group. Headache was reported by 68% of the patients with ICA and by 69% of those with VAD, and, when present, it was the initial manifestation in 47% of those with ICA and in 33% of those with VAD.	2
40. Medina LS, Pinter JD, Zurakowski D, Davis RG, Kuban K, Barnes PD. Children with headache: clinical predictors of surgical space-occupying lesions and the role of neuroimaging. <i>Radiology</i> 1997; 202(3):819-824.	13	315	Retrospective study to determine clinical predictors useful in differentiation of surgical lesions from medically treated disorders and the role of neuroimaging in children with headache.	Thirteen (4%) patients had surgical space-occupying lesions. Sleep-related headache and no family history of migraine were the strongest predictors. No difference between MRI and CT was noted in detection of surgical space-occupying lesions, and there were no false positive or false negative surgical lesions detected with either modality on the basis of clinical follow-up.	2
41. Caselli RJ, Hunder GG, Whisnant JP. Neurologic disease in biopsy-proven giant cell (temporal) arteritis. <i>Neurology</i> 1988; 38(3):352-359.	13	166	To study neurologic findings in patients with biopsy-proven giant cell (temporal) arteritis.	<ul style="list-style-type: none"> <li>• Neurologic problems occurred in 51 patients (31%): neuropathies (23), TIA/strokes (12), neuro-otologic syndromes (11), tremor (6), neuropsychiatric syndromes (5), tongue numbness (3), and myelopathy (1).</li> <li>• Neuro-ophthalmologic problems occurred in 35 patients (21%): amaurosis fugax (AF) (17), permanent vision loss (PVL) (14), scintillating scotoma (8), and diplopia (3).</li> <li>• Abnormalities in large arteries in 52 patients (31%) included bruits and diminished pulses. The carotid artery was involved in 31 patients (bilateral in 58%). Overall, 35% of patients with carotid disease had TIA/stroke, AF, or PVL.</li> </ul>	3
42. Husein AM, Haq N. Cerebral arteritis with unusual distribution. <i>Clin Radiol</i> 1990; 41(5):353-354.	14	N/A	Case report of the diagnosis of giant cell arteritis (GCA).	Important to recognize GCA, which can be effectively controlled with steroids.	4

**Headache  
EVIDENCE TABLE**

Reference	Study Type	Patients/ Events	Study Objective (Purpose of Study)	Study Results	Strength of Evidence
43. Wilkinson IM, Russell RW. Arteries of the head and neck in giant cell arteritis. A pathological study to show the pattern of arterial involvement. <i>Arch Neurol</i> 1972; 27(5):378-391.	14	12	A pathological study on patients with GCA to show the pattern of arterial involvement.	Observed relative frequency of some clinical phenomena in 12 cases are: <ul style="list-style-type: none"> <li>• Sudden monocular blindness in 7 cases.</li> <li>• Sudden total occipital blindness in 2 cases.</li> <li>• Clinical indications of brain stem ischemia in 5 cases, taking the form of the lateral medullary syndrome in 3 cases.</li> <li>• Clinical features of severe unilateral cerebral hemisphere ischemia in 2 cases.</li> </ul>	4
44. Ramchandren S, Cross BJ, Liebeskind DS. Emergent headaches during pregnancy: correlation between neurologic examination and neuroimaging. <i>AJNR</i> 2007; 28(6):1085-1087.	13	63	Retrospective review to examine demographic and clinical features that are predictive of intracranial pathologic lesions on neuroimaging studies in pregnant women with emergent headaches.	<ul style="list-style-type: none"> <li>• 43% of subjects had abnormal neurologic examination findings.</li> <li>• Emergent neuroimaging studies may reveal an underlying headache etiology in 27% of pregnant women.</li> <li>• -Odds of having intracranial pathologic lesions on neuroimaging were 2.7 times higher in patients with abnormal results on neurologic examination (P=.085).</li> </ul>	3
45. Lipton RB, Feraru ER, Weiss G, et al. Headache in HIV-1-related disorders. <i>Headache</i> 1991; 31(8):518-522.	13	49	To define the causes, clinical significance and characteristics of headaches in HIV-1-related disorders.	40 of 49 patients (82 percent) had an identifiable serious cause of headache. Cryptococcal meningitis (39%) and CNS toxoplasmosis (16%) were the leading headache etiologies.	3
46. Sze G, Johnson C, Kawamura Y, et al. Comparison of single- and triple-dose contrast material in the MR screening of brain metastases. <i>AJNR Am J Neuroradiol</i> 1998; 19(5):821-828.	9	92	To compare the clinical utility of single-dose with triple-dose contrast administration.	In all 70 negative single-dose studies, the triple-dose studies depicted no additional metastases in terms of the standard of reference. No statistically significant difference was seen between the results of the single and triple dose studies.	1
47. Yokoi K, Kamiya N, Matsuguma H, et al. Detection of brain metastasis in potentially operable non-small cell lung cancer: a comparison of CT and MRI. <i>Chest</i> 1999; 115(3):714-719.	9	332	Prospective study to compare the usefulness of MRI and CT in the detection of brain metastases during preoperative evaluation and postoperative follow-up.	MRI detected brain metastases preoperatively in 6 of the 12 patients (3.4% of the total MRI group), whereas CT detected brain metastases preoperatively in 1 of the 11 patients (0.6% of the total CT group). MRI showed a trend toward a higher preoperative detection rate of brain metastases than CT (P=0.069). There was no significant difference between the groups in survival time.	2

**Headache**  
**EVIDENCE TABLE**

Reference	Study Type	Patients/ Events	Study Objective (Purpose of Study)	Study Results	Strength of Evidence
48. Castillo M. Imaging of meningitis. <i>Semin Roentgenol</i> 2004; 39(4):458-464.	12	N/A	To review conventional MRI of pyogenic meningitis and its complications and the utility of newer techniques; diffusion-weighted imaging (DWI), fluid attenuation inversion recovery (FLAIR) T2-weighted images, and proton magnetic resonance spectroscopy (MRS).	No results.	4
49. Kastrup O, Wanke I, Maschke M. Neuroimaging of infections. <i>NeuroRx</i> 2005; 2(2):324-332.	12	N/A	To review role of neuroimaging in the diagnosis and therapeutic decision making in infectious diseases of the nervous system.	<ul style="list-style-type: none"> <li>• CT appears to be sufficient for clinical management.</li> <li>• MRI is superior in depicting complications.</li> <li>• DWI shows early parenchymal complications of meningitis earlier and with more clarity.</li> <li>• Proton MRS seems to produce specific peak patterns in cases of abscess.</li> </ul>	4
50. Silberstein SD. Headaches in pregnancy. <i>Neurol Clin</i> 2004; 22(4):727-756.	12	N/A	To review of diagnosis and treatment of headaches in pregnancy.	Diagnostic testing serves to exclude organic causes of headache, to confirm the diagnosis, and to establish a baseline before treatment. If neurodiagnostic testing is indicated, the study that provides the most information with the least fetal risk is the study of choice.	4
51. American College of Radiology. <i>Manual on Contrast Media</i> . Available at: <a href="http://www.acr.org/SecondaryMainMenuCategories/quality_safety/contrast_manual.aspx">http://www.acr.org/SecondaryMainMenuCategories/quality_safety/contrast_manual.aspx</a> .	15	N/A	Guidance document on contrast media to assist radiologists in recognizing and managing risks associated with the use of contrast media.	N/A	3

## Evidence Table Key

### Study Type Key

*Numbers 1-7 are for studies of therapies while numbers 8-15 are used to describe studies of diagnostics.*

1. Randomized Controlled Trial — Treatment
2. Controlled Trial
3. Observation Study
  - a. Cohort
  - b. Cross-sectional
  - c. Case-control
4. Clinical Series
5. Case reviews
6. Anecdotes
7. Reviews
8. Randomized Controlled Trial — Diagnostic
9. Comparative Assessment
10. Clinical Assessment
11. Quantitative Review
12. Qualitative Review
13. Descriptive Study
14. Case Report
15. Other (Described in text)

### Strength of Evidence Key

- Category 1 - The conclusions of the study are valid and strongly supported by study design, analysis and results.
- Category 2 - The conclusions of the study are likely valid, but study design does not permit certainty.
- Category 3 - The conclusions of the study may be valid but the evidence supporting the conclusions is inconclusive or equivocal.
- Category 4 - The conclusions of the study may not be valid because the evidence may not be reliable given the study design or analysis.