Title:	**Endovascular neurointerventional procedures**
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Aim: To assess the safety and effectiveness of endovascular procedures for the embolisation of brain and spinal arteriovenous malformations (AVMs), the embolisation of dural arteriovenous fistulae (DAVF) and carotid-cavernous fistulae (CCF), the treatments for vasospasm as a complication of subarachnoid haemorrhage (SAH), the treatment for arterial atherosclerosis and the treatment for intracranial arteries in acute stroke.

Results and conclusions
Few comparative studies were identified which investigated endovascular procedures which are indicated on the Australian Register of Therapeutic Goods for intracranial use in Australia. No randomised controlled trials with a distinct comparator were available. Due to the heterogeneity of the treatments reported for each indication it was not possible to combine the results of the studies.
Safety: There is little comparative evidence for conclusions about the relative safety of endovascular neurointerventional procedures versus other therapies. For treatment of AVMs, DAVF or CCF mortality was lower with endovascular embolisation, either alone or in combination with other treatment methods. Endovascular treatment of vasospasm with balloon angioplasty prophylaxis resulted in lower mortality compared to conservative treatment. For endovascular treatment of intracranial atherosclerosis using balloon angioplasty the adverse events included vessel dissection, stroke and death. In both studies which reported the use of endovascular procedures in the treatment of acute stroke, balloon angioplasty was used following failed intra-arterial thrombolysis, a technique which is not registered for intracranial use in Australia. Mortality rates were similar in both the treatment and control groups. No other adverse events were reported.
Effectiveness: There is insufficient evidence for effectiveness for all five indications.
Cost-effectiveness: Due to a lack of published literature, it is not possible to determine cost-effectiveness of any of the intracranial endovascular procedures investigated in this report.

Recommendations: For the indications of embolisation of AVMs, DAVF and CCF, MSAC finds that there is evidence of safety compared to alternative therapies, but that there is insufficient evidence to assess effectiveness and cost-effectiveness. Given that there are limited treatment options MSAC recommends that current public funding arrangements should continue. For the indications of endovascular treatments for vasospasm as a complication of SAH, for arterial atherosclerosis and for intracranial arteries in acute stroke MSAC finds that there is insufficient evidence for safety and effectiveness. MSAC recommends that public funding for these interventions should not be supported. The Minister for Health and Ageing endorsed this recommendation on 30th August 2006.

Methods:
MSAC conducted a systematic review of literature (Medline, Embase, Current Contents, PubMed, the Cochrane Library, York Centre for Reviews and Dissemination, Clinicaltrials.gov, National Research Register) from 1980 to January 2006.