The Stent-Supported Percutaneous Angioplasty of the Carotid Artery vs. Endarterectomy Trial (SPACE) is investigating if both treatment modalities are equivalent in the treatment of severe symptomatic carotid stenoses. Patients with symptomatic (transient ischaemic attack or minor stroke) stenosis (above 50% following the North American Symptomatic Endarterectomy Trial criteria) eligible for both methods can be recruited into this trial. The primary endpoint is the incidence of an ipsilateral stroke or death between randomisation and day 30 after treatment. Surgeons as well as the interventionalists have to demonstrate their expertise prior to participation in the trial. Funding is mostly by public institutions (Federal Ministry of Education and Research and German Research Foundation). An external monitoring is applied. Thirty-two centres are currently taking part in the SPACE Trial that has been running in Germany, Austria and Switzerland for 3 years, and they have been able to recruit a total of around 670 patients. The definitive results of this study cannot be expected before 3–5 years.