The "Lumbar Spine Outcome Assessment Instrument", developed by the North American Spine Society (NASS), was translated into German. Its psychometric properties were tested in a group of rehabilitation patients with chronic, unspecific back pain, and in a comparison group of patients in cardiologic rehabilitation. With a Cronbach's alpha of 0.92, internal consistency was high. Principal component analysis revealed that the German version of the NASS instrument surveys the factors "back pain", "neurologic symptoms", and "impairments". A strong correlation with other measures of functional impairment (FFbH-R, IRES) indicates a high concurrent validity of the NASS instrument. After three weeks of inpatient rehabilitation, sensitivity to change could be demonstrated for the summary score of the instrument. This significant change was primarily due to moderate effects in the factor "back pain". In our study population, the factor "impairments" did not show a significant change. On the basis of these results, the German version of "The North American Spine Society Lumbar Spine Outcome Assessment Instrument" can be described as a reliable and valid instrument for measuring back pain, related neurologic symptoms, and back pain-induced impairments in rehabilitation patients. Because the factor "impairments" is not sensitive to change within three weeks of rehabilitation, the instrument is only partly suitable for measuring short-term outcome in rehabilitation patients. Further research is needed to determine if the instrument is useful for middle- and long-term outcome measurement in rehabilitation.