Background
Liver cancer is the fifth most common cancer worldwide and the third largest to cause death. Protein-energy malnutrition is common in patients with liver disease and they often suffer from changes in the hepatic metabolism of nutrients and other substances. There is a basis for recommending BCAA supplementation in other certain liver diseases. Given the similar clinical picture of liver cancer surgery, it is possible that supplementation of BCAA can be beneficial for these patients as well.

Objective
The aim was to study the scientific basis for the effect of branched chain amino acid (BCAA) supplementation in liver cancer patients. Can it improve their recovery in terms of nutritional status and albumin levels, and does it changes the duration of hospital stay, after surgery?

Search strategy
Five extensive searches were performed on PubMed and Cochrane after appropriate study material. After careful processing of the search results five relevant articles remained.

Selection criteria
Studies with patients who underwent surgery for liver cancer and were given BCAA supplementation were included. These articles had to be written in Swedish or English and be of the study design RCT or CCT. Articles written in other languages, with other study designs, with the wrong intervention or treating other diseases were excluded.

Data collection and analysis
The five studies that the results were based on were analysed and assessed against the audit templates developed by SBU (Granskningsmall för randomiserade studier and Granskningsmall för observationsstudier och icke-randomiserade kontrollerade studier) and evidence was assessed according to the GRADE system.

Main results
The studies differed in terms of intervention, duration and choice of endpoints. However, all studies had albumin as an endpoint and the clear results showed significant improvement in albumin levels. Significant differences were also seen at certain times in terms of improved nutritional status, shorter hospital stay, fewer cases of postoperative complications and improved blood values. However, no study showed any improvement on survival.

Conclusions
Supplementation of BCAA in patients undergoing resection for liver cancer leads to higher albumin levels, both after three to six months and after one year. Also nutritional status and time of hospitalization shows favorable results associated with BCAA supplementation.