

About The Data

The data consists of measurements made on patients with malignant melanoma. Each patient had their tumour removed by surgery at the Department of Plastic Surgery, University Hospital of Odense, Denmark during the period 1962 to 1977. The surgery consisted of complete removal of the tumour together with about 2.5cm of the surrounding skin.

Among the measurements taken were the thickness of the tumour and whether it was ulcerated or not. These are thought to be important prognostic variables in that patients with a thick and/or ulcerated tumour have an increased chance of death from melanoma. Patients were followed until the end of 1977. The data frame contains the following columns.

- time - Survival time in days since the operation.
- status - The patients status at the end of the study.
1 indicates that they had died from melanoma, 2 indicates that they were still alive and 3 indicates that they had died from causes unrelated to their melanoma.
- sex - The patients sex; 1=male, 0=female.
- age - Age in years at the time of the operation.
- year - Year of operation.
- thickness - Tumour thickness in mm.
- ulcer - Indicator of ulceration; 1=present, 0=absent

Tasks

- (i) Create summary statistics for each of the variables in the data set and a commentary on the values of these statistics.
- (ii) Appropriate graphical summaries of each of the variables in the data set and a commentary on any emerging aspects or trends.
- (iii) Conduct appropriate bivariate analysis to reveal the relationship among the variables.
- (iv) Discuss the insights generated and make recommendations on any aspects that should be investigated in more detail.