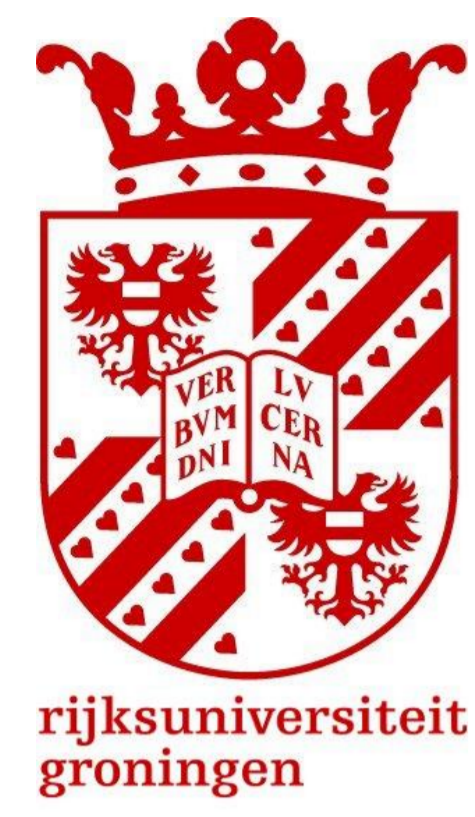


# Bleeding Score: normal values for healthy young adults



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**Introduction and objective:** bleeding assessment tools (BATs) are increasingly used to quantify bleeding tendency and to preselect patients for haemostatic evaluation. Normal values are available for adults and children, but not for adolescents/young adults.

**The aim of this study was to establish reference values for young adults for the Toretto Bleeding Score (BS)**

**Materials and methods:** in educational buildings of the University of Groningen, The Netherlands, subjects aged 18-23 were administered the BS by trained medical students. A previously diagnosed bleeding disorder was the only exclusion criterion. We aimed to define 95% of the population as normal.

**Results:** 328 subjects were included, with a mean age of 20.0 years. 40.2% were male, 75.6% were university students. Median BS was 1 (range -2 – 8). The distribution of scores is shown in Figure 1 (overall) and Figure 2 (males and females separately). A score of 4 or below described 95.1% of the population. For men, median BS was 1 with a range of 1-6. Cutoff was > 4 (97% scored 4 or below). For women, median BS was 1 with range -2 – 8. Cutoff was > 5 (96.4% scored 5 or below). Surprisingly, relatively high prevalences of muscle hematoma (13.7%) and hemarthrosis (7.3%) were reported. Most often, these were traumatic. The item 'minor wounds' was not very informative, with 77.7% of subjects scoring 1 point. Table 1 shows the points that were scored per category.

## Conclusions

- Young adults aged 18-23 from the general population report relatively high prevalences of bleeding symptoms, mainly for minor bleeds, epistaxis and menorrhagia.
- For the Toretto Bleeding Score, 95% of the population is best described by 4 or less points for males, and 5 points or less for females. This is higher than previously reported for both children and adults from all ages.
- These data are helpful when evaluating young adults referred for possible mild bleeding disorders.

**In short, for young adults, Bleeding Score up to 4 is normal for men, and up to 5 is normal for women**

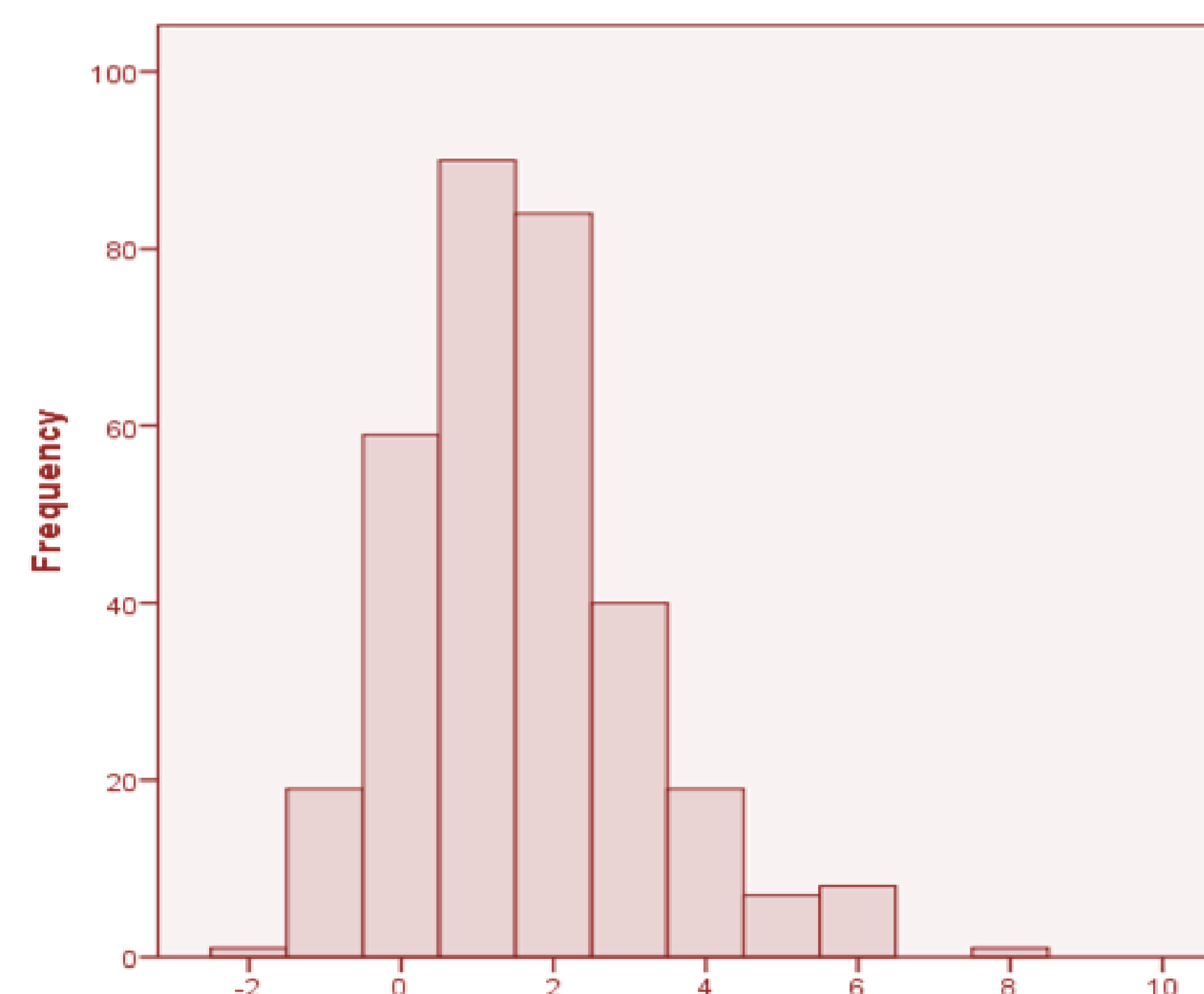


Figure 1: Distribution of bleeding scores

Category	Mean	Sum
Bleeding from minor wounds	0.85	280
Epistaxis	0.41	134
Menorrhagia*	0.27	52
Cutaneous	0.16	51
Muscle haematomas	0.14	45
Oral cavity	0.08	27
Haemarthrosis	0.08	27
Gastrointestinal bleeding	0.05	17
Central nervous system bleeding	0.00	0
Postpartum haemorrhage*	-0.01	-1
Surgery	-0.12	-39
Tooth extraction	-0.20	-65

Table 1: Points scored per category (\*calculated in women only)

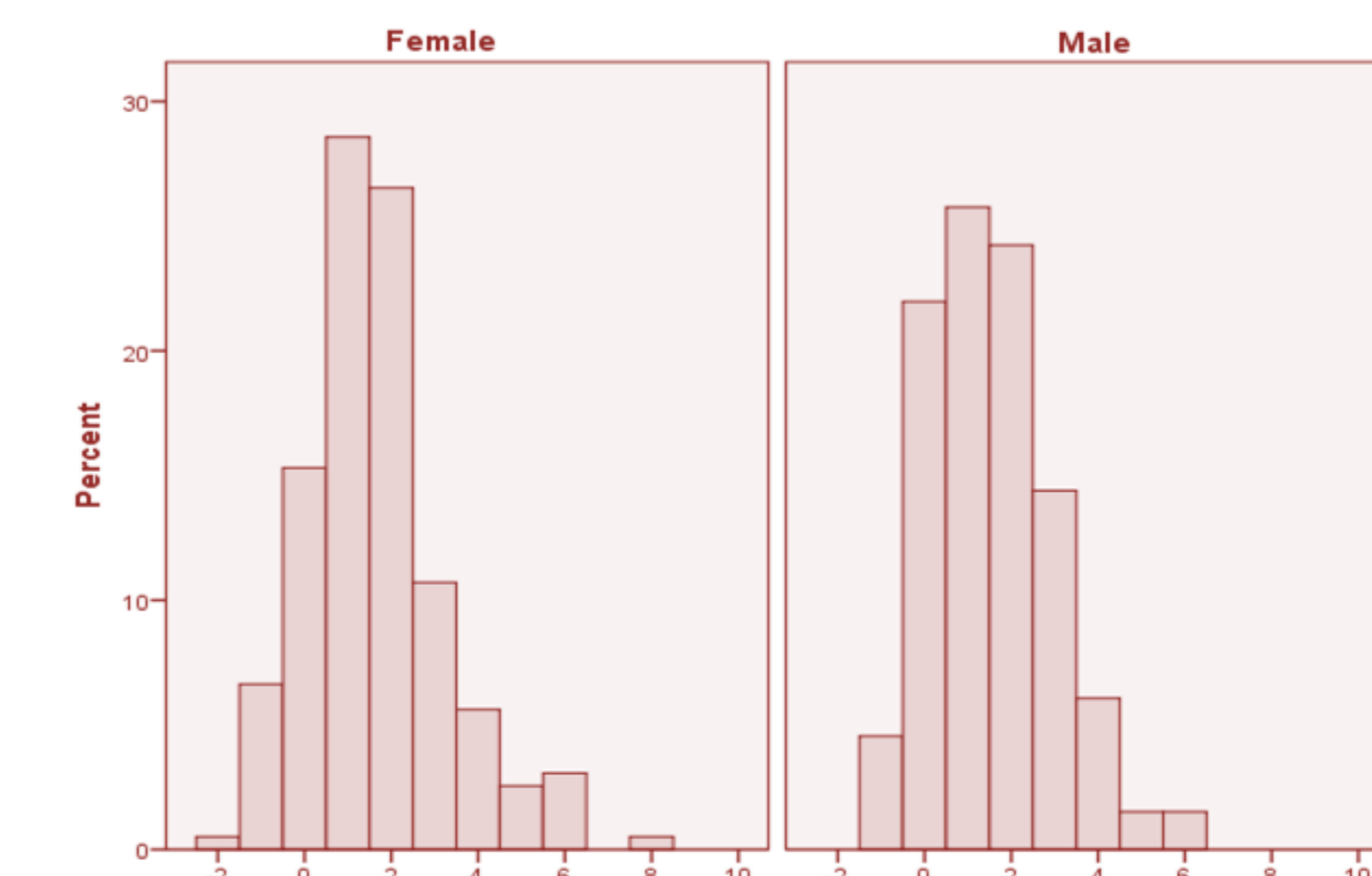


Figure 2: Distribution of bleeding scores, males and females separately

