

## **Abstract**

This bachelor thesis focuses on testicular germ cell tumors (TGCT) and associated sperm and tissue pathologies in the context of different clinical and experimental perspectives. Testicular cancer is the most common malignancy among young men in the reproductive age and the worldwide incidence of testicular cancer is on the rise. This thesis emphasizes the importance of better cooperation between scientific findings from primary research and their clinical implementations in cancer management. The main aim of this thesis is not only to summarize current knowledge of healthy and tumor affected sperm and testes tissue, but primarily define clinical and especially experimental approaches of how to reveal, study and treat TGCT. In order to gain a deeper understanding and insight into TGCT, the data discussed in this thesis comes from the genetic, epigenetic, proteomic, endocrinologic and metabolic fields. More research on the underlying mechanisms of testicular cancer will further improve the quality of life of many young people faced with this diagnose.

**Keywords:** sperm parametrs, testicular germ cells, testicular tumors, tumor treatment, diagnostic strategies