The presented bachelor work is focused on the determination of frequency chromosomally abnormal sperm in the semen of healthy men (donors) with normal karyotype (46, XY). The important process, which plays an irreplaceable role in the development of numerical aberrations of chromosomes or structural abnormalities in the segregation of the gametes, is meiosis. Therefore, I devote much attention on meiosis in the theoretical part. The theoretical part is focused on the process of pre mature sperm (spermatogenesis), and the consequences of fertilize the oocyte by aneuploid sperm. In my work I present an overview of numerical abnormalities in autosomes and gonosomes and their frequency and distribution of gametes in healthy men. I also focused on the distribution and a brief description of structural aberrations affecting chromosomes and not least I paid attention on method of multicolor interphase fluorescence in situ hybridization, which in combination with sperm chromatin dekondenzation become irreplaceable and valuable research tool for rapid analysis of chromosomal abnormalities in large sperm samples. The experimental part of bachelor work deals with monitoring the frequency of selected numerical abnormalities in sperm samples of five donors aged 23 to 30 years with the use of I-FISH (fluorescence in situ hybridization) with satellite probes for autosomal 18 and gonozomes X and Y. The frequency of aberrations of autosomes 18 and gonosomes X, Y ranged from 0.4 to 2.13%. By using fluorescence microscopy were observed only disomy, diploidy or nulisomy sperm. No other numerical aberrations were found in sperm. This work was not focused on the search for structural aberrations in sperm.