A total of 50,558 healthy subjects underwent an FDG-PET (including PET/CT) scan with or without combination of other tests for cancer screening in 46 PET centers during fiscal year of 2005 in Japan. Thorough examination was indicated for 9.8% of the cases due to positive findings suggesting possible cancer. On analyzing 43,996 cases from 38 PET centers, where detailed information was obtained, 500 cases of cancers (1.14%) were found, of which 0.90% was PET positive and 0.24% was PET negative, resulting in the relative sensitivity of PET being 79.0%. Cancers of thyroid, colon/rectum, lung and breast were most frequently found (107, 102, 79, 35 cases, respectively) with high PET sensitivity (88%, 90%, 80%, 92%). PET showed an overall positive predictive value of 29.0%. PET/CT had better detection rate, sensitivity, and positive predictive value than dedicated PET (p < 0.01).

Key words: FDG, PET, PET/CT, Cancer screening.