# Diagnostic Accuracy of FOBT and Colorectal Cancer Genetic Testing: A Systematic Review & Meta-Analysis

## ABSTRACT

Colorectal cancer (CRC) is the second leading cause of cancer related death in the world after lung cancer. Early detection of CRC leads to improvement in cancer survival rate. In recent years, efforts have been made to discover a non-invasive screening marker of higher sensitivity and specificity. Fecal occult blood testing (FOBT) and genetic testing become alternative modalities to screen CRC in the population other than colonoscopy. The aim of this systematic review and meta-analysis is to determine the diagnostic accuracy, sensitivity and specificity of FOBT and genetic testing as screening tools in colorectal cancer. Methods: A literature search of PubMed, ScienceDirect, and Scopus was carried out. The search strategy was restricted to human subjects and studies are published in English. Data on sensitivity and specificity were extracted and pooled. Heterogeneity was assumed at significance level of $p < 0.10$ and was tested by chi squared. Degree of heterogeneity was quantified using the I2 statistic, and values of less than 25% is considered as homogenous. All analyses were performed using the software Meta-Disc. Results: A total of eleven studies were suitable for data synthesis and analysis. Five studies were analyzed for the accuracy of genetic testing, the pooled estimate for sensitivity and specificity were 71% (95% CI: 66, 75%) and 95% (95% CI: 93, 97%) respectively. Another group of studies which had been evaluated for the accuracy of FOBT, the pooled sensitivity was 31% (95% CI: 25, 38%) while the pooled specificity was 87% (95% CI: 86, 89%). Conclusions: FOBTs is recommended to use as population-based screening tools for colorectal cancer while genetic testing should be focusing on patients with moderate and high risk individuals.