Colorectal cancer (CRC) screening is a rapidly moving field. This thesis provides strategies and insights that may contribute to optimizing CRC screening. The main topics of the thesis are introduced in part I. An overview is given about the burden of CRC worldwide and the initiatives to reduce this burden. All modalities eligible for screening are discussed with special focus on fecal tests. These chapters are followed by the aims and outline of the thesis.

Part II further focuses on fecal occult blood test-based CRC screening. The main two fecal occult blood tests are the guaiac-based fecal occult blood test (gFOBT) and the more recently developed fecal immunochemical test (FIT). The diagnostic accuracy of FIT and gFOBT in average-risk individuals is compared in a meta-analysis. The subsequent chapters explore various aspects of FIT screening and screening strategies using FIT screening.

Part III of the thesis provides more insight in factors that are associated with quality in CRC screening, surveillance and colonoscopy. We evaluate the accuracy, quality, and readability of online information on CRC screening and surveillance. Quality indicators for colonoscopy are obtained from different hospitals and the effect of plenary feedback on variation in quality of colonoscopy is assessed. Also, adherence to recommended surveillance intervals following removal of adenomas is evaluated.

Finally, part IV discusses the main findings and insights obtained from our research projects and gives directions for future research.