Impact of Individual Risk Assessment on Prostate Cancer Diagnosis

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Current prostate-specific antigen (PSA) screening practice leads to two important unwanted side effects: first of all screening induces many unnecessary prostate biopsies and secondly it leads to overdiagnosis and overtreatment of prostate cancer. The large amount of unnecessary prostate biopsies, as well as the overdiagnosis of potentially indolent disease after a prostate cancer diagnosis, might be reduced by using prediction models. These models, using individual risk estimations, support the identification of men at increased risk for prostate cancer and the identification of potentially indolent disease after a prostate cancer diagnosis. Traditionally, urologists have not used prediction models in their standard practice. The aim of this thesis was testing a decision aid for men considering PSA testing and applying risk-based strategies. The data of the studies described in this thesis are the result of an active implementation of these tools.