

# THE ROLE OF ARTIFICIAL INTELLIGENCE IN CERVICAL CANCER SCREENING: A SYSTEMATIC REVIEW AND META ANALYSIS

**TITLE :** THE ROLE OF ARTIFICIAL INTELLIGENCE IN CERVICAL CANCER SCREENING: A SYSTEMATIC REVIEW AND META ANALYSIS

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**BACKGROUND:** This study examines the impact of cervical cancer on underdeveloped nations and underscores the urgent need for rapid, cost-effective, and accurate screening and treatment technologies.

**AIMS & OBJECTIVES:** It aims to analyze the current utilization, effectiveness, and challenges associated with incorporating artificial intelligence (AI) into cervical cancer screening.

**METHODS:** Utilizing a dual-phase methodology, the study systematically searched major electronic databases for research articles specifically investigating AI in cervical cancer screening. Seventeen studies conducted between 2013 and 2023 were identified, employing various approaches such as dynamic scene and object examination.

**RESULTS & CONCLUSIONS :** Data analysis revealed sensitivities and specificities ranging from 0.22 to 0.93 and 0.67 to 0.95, respectively, with fusion procedures achieving a 68% accuracy rate for four cervical lesion classes. Notably, a smartphone solution demonstrated reliability with 0.9 sensitivity and 0.87 specificity. The review underscores AI's potential in deciphering patterns, addressing challenges, and offering innovative solutions globally. Superiority was noted in support vector machine (SVM) and deep learning algorithms, suggesting a promising trajectory for AI in cervical cancer diagnostics. Overall, these findings underscore the transformative potential of AI in cervical cancer screening, emphasizing the need for continued research and implementation efforts.

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