

## ARTIFICIAL INTELLIGENCE HELP PREDICT MOUTH CANCER RISK



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### ARTIFICIAL INTELLIGENCE HELP PREDICT MOUTH CANCER RISK

#### Issue

Artificial intelligence (AI) and machine learning may help doctors better predict the risk of patients developing oral cancer by ensuring accuracy, consistency and objectivity.

#### Background

Oral cancer is often detected late which means that the patient survival rates are poor. The new development seeks to reverse the trend.

#### Details

- The rate of people being diagnosed with oral cancers including mouth, tongue, tonsil and oropharyngeal cancer, has increased by almost 60% in the last 10 years.
- Evidence suggests tobacco and alcohol consumption, viruses, old age as well as not eating enough fruit and vegetables can increase the risk of developing the disease.
- Currently, doctors must predict the likelihood of pre-cancerous changes, known as oral epithelial dysplasia (OED), developing into cancer by assessing a patient's biopsy on 15 different criteria to establish a score.
- This score then determines whether action is needed and what treatment pathway should be taken. However, this score is subjective, which means there are often huge variations in how patients with similar biopsy results are treated.
- Correct grading is vital in early oral cancer detection to inform treatment decisions, enabling a surgeon to determine whether a lesion should be monitored or surgically removed.

- Machine learning and AI can aid tissue diagnostics by removing subjectivity, using automation and quantification to guide diagnosis and treatment.
- These algorithms will aid pathologists in their assessment of biopsies helping them to make a more informed and unbiased decision about the grading of the cells and the patient's treatment pathway.

### Artificial Intelligence (AI)

Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions.

The ideal characteristic of artificial intelligence is its ability to rationalize and take actions that have the best chance of achieving a specific goal.

### Applications of AI

- AI is being tested and used in the healthcare industry for dosing drugs and different treatment in patients, and for surgical procedures in the operating room.
- Examples of machines with artificial intelligence include computers that play chess and self-driving cars. Each of these machines must weigh the consequences of any action they take, as each action will impact the end result.
- Artificial intelligence also has applications in the financial industry, where it is used to detect and flag activity in banking and finance such as unusual debit card usage and large account deposits.



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