

# Early Diagnosis and Treatment of Oral Cancer

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## Introduction

A key driving force for precision and individualised medicine is achieving the goal of early and accurate diagnosis, as well as providing the best evidence-based treatment option for disease. A plethora of diagnostic methods have already been developed, and liquid biopsy (LB) has recently gained global attention as a precision diagnostic tool in cancer research. Cancer is emerging as a major global public health concern, particularly in Africa, where many cancer cases are diagnosed at late stages of the disease [1]. This is due to factors such as limited knowledge and expertise in disease screening, limited diagnostic infrastructure, and, for the majority of patients, fear of surgery, poverty, lack of access to specialist care, and a low educational level, among others—these are some of the major barriers to early presentation and cancer diagnosis among African populations [2].

## Description

Because of its non-invasive nature, accuracy, and lack of reliance on surgical facilities, novel diagnostic tools such as LB could aid in addressing these challenges. LB has emerged as a quick, dependable, and minimally invasive cancer screening solution with high specificity and sensitivity for cancer diagnosis and monitoring. The high specificity and sensitivity of LB, as demonstrated in developed countries, offers a promising diagnostic tool that would improve screening capability and the potential for early diagnosis of cancer cases in Africa, as well as likely reduce the incidence of morbidity and mortality from cancer on the continent. Furthermore, the implementation of policies that facilitate easy access to valuable cancer diagnostic procedures, such as LB, can help reduce the financial burden [3].

Oral squamous cell carcinoma (OSCC) is one of the world's ten most common cancers, with high morbidity and mortality rates. This emphasises the importance of screening programmes and techniques for the early detection of cancer. A lack of access to oral health care, which can lead to a delay in diagnosis, has been linked to lower OSCC survival rates in a number of low and middle-income countries, including those in Africa [4]. Timely detection and diagnosis of OSCC may save lives in these countries by increasing survival rates, lowering treatment-related morbidities, and improving surveillance of recurrent cancer cases. As a result, it is critical to understand how LB

procedures are currently emerging and being used in low- and middle-income countries, as well as the blood biomarkers involved in oral cancer [5].

## Conclusion

### Liquid Biopsy and Cancer Management

LBs can be used in cancer patients to investigate biological components in liquid forms for diagnosis, screening, and prognosis. LB may involve the analysis of released circulating tumour cells (CTCs) and circulating tumour DNA (ctDNA) in a cancer patient's blood or body fluid. These analytes are complementary biomarkers with high potential for use in various cancer drug discovery platforms. Circulating cell-free RNA (cfRNA), exosomes, and platelets are some of the other analytes that can be identified using LB. Liquid biopsy analytes have the potential to improve cancer diagnosis, treatment, and surveillance, as well as detect drug resistance and improve our understanding of tumour heterogeneity. Other physiological fluids that can be used for testing include saliva, urine, pleural effusions, seminal plasma, sputum, cerebrospinal fluid, and stool samples in addition to blood.

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