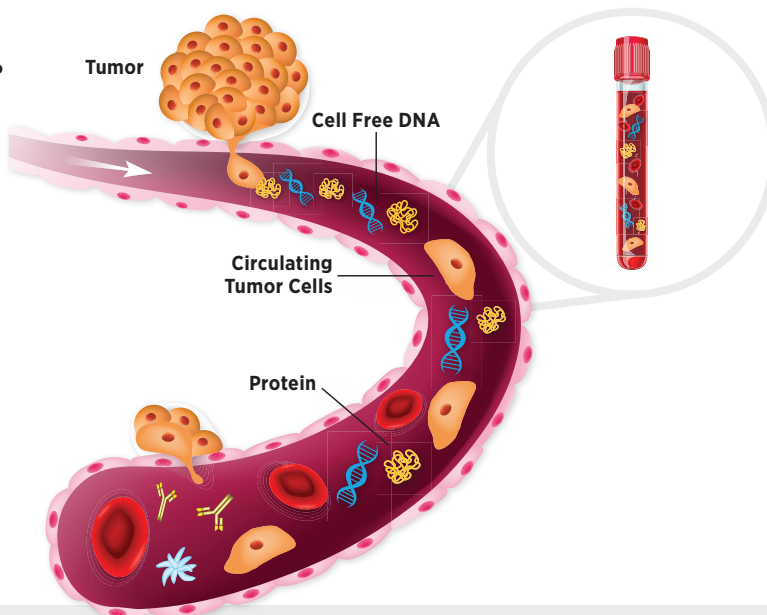


FIGURE 20 MOVING TOWARD MINIMALLY INVASIVE TESTING

WHAT QUESTIONS COULD LIQUID BIOPSIES ANSWER?

1. Is cancer present? Where is it?
2. Has the cancer spread?
3. What genetic changes does the tumor have?
4. What treatments might work?
5. Are treatments working?
Is the cancer becoming resistant to the treatment?
6. Is there any cancer left after treatment?
7. Is there a risk of cancer recurrence?



Liquid biopsy refers to the collection and analysis of blood or other biofluids. In cancer science and medicine, it primarily involves the capture and analysis of cells, lipid-encapsulated sacs called exosomes, or free DNA shed by tumors. As a result, a blood sample, rather than a biopsy of the tumor tissue itself, could be used to analyze genomic alterations in a patient's cancer. Liquid biopsies have the potential to be safe and less invasive for the patient, more likely to result in patient

compliance, and may be better representative of tumor heterogeneity than a typical biopsy. Currently, liquid biopsies are used in the clinic to detect mutations in cancers that are targetable by therapeutics. Ongoing research is assessing the value of liquid biopsies in detecting cancers early, evaluating response to treatment, detecting treatment resistance and evaluating tumor heterogeneity, and monitoring minimal residual disease, among other uses.