# Article information:

Radiomics as a personalized medicine tool in lung cancer: Separating the hope from the hype - PubMed  
<https://pubmed.ncbi.nlm.nih.gov/32563015/>

# Article summary:

1. Radiomics is a popular image analysis method that calculates image features at scale to identify those most strongly associated with outcome, but technical limitations hinder biomarker translation.

2. Non-Small Cell Lung Cancer (NSCLC) is one of the most commonly studied uses of radiomics for personalized medicine applications.

3. The quality of ongoing and future radiomics studies can be improved through wider awareness and the use of complementary scoring systems and initiatives to critically appraise data from radiomics studies.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article "Radiomics as a personalized medicine tool in lung cancer: Separating the hope from the hype" provides a critical review of the current state of radiomics as a potential biomarker for personalized medicine in non-small cell lung cancer (NSCLC). The authors acknowledge that radiomics has gained popularity in recent years due to its ability to extract biological, prognostic, and predictive information from medical images that may not be visible upon visual inspection. However, they also highlight several technical limitations that hinder the translation of imaging biomarkers into clinical practice.

The article provides a detailed overview of the radiomic workflow, including image acquisition and reconstruction, segmentation, feature extraction, pre-processing steps, and data analysis. The authors note that repeatability and reproducibility are key requirements for the translation of imaging biomarkers into clinical practice but highlight several methodological limitations in CT-based radiomic analyses. They suggest solutions to these limitations and evaluate the current NSCLC radiomics literature to assess the risk associated with accepting published conclusions with respect to these limitations.

The authors also review different complementary scoring systems and initiatives that can be used to critically appraise data from radiomics studies. They provide boxplots showing the assessment of literature plotted against each other based on Radiomics Quality Score (RQS), Transparent Reporting of a multivariable prediction model for Individual Prognosis Or Diagnosis (TRIPOD), and number of methodological limitations found in this review.

Overall, the article provides a balanced view of radiomics as a potential biomarker for personalized medicine in NSCLC. While acknowledging its potential benefits, it also highlights several technical limitations that need to be addressed before it can be translated into clinical practice. The authors provide suggestions for addressing these limitations and evaluating data from radiomics studies critically. However, they do not explore counterarguments or present both sides equally. Additionally, while they note possible risks associated with accepting published conclusions without considering limitations, they do not provide evidence for these claims.

# Topics for further research:

* Limitations of radiomics in medical imaging beyond NSCLC
* Radiomics and its potential impact on personalized medicine
* Current challenges in the translation of imaging biomarkers into clinical practice
* Radiomics quality score and its application in evaluating radiomics studies
* Reproducibility and repeatability in radiomics research
* Ethical considerations in the use of radiomics as a biomarker for personalized medicine

# Report location:

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