# Article information:

Skin Cancer Detection: A Review Using Deep Learning Techniques - PMC  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8160886/>

# Article summary:

1. Skin cancer is a dangerous form of cancer caused by un-repaired DNA in skin cells, and early detection is crucial for successful treatment.

2. Deep learning techniques, such as artificial neural networks (ANN), convolutional neural networks (CNN), Kohonen self-organizing neural networks (KNN), and generative adversarial neural networks (GAN), have been used for computer-based skin cancer detection.

3. A systematic literature review was conducted to analyze 51 relevant research papers on deep learning techniques for skin cancer detection, and while progress has been made, there is still room for improvement in diagnostic techniques.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

The article "Skin Cancer Detection: A Review Using Deep Learning Techniques" provides a comprehensive review of deep learning techniques for the early detection of skin cancer. The article highlights the importance of early detection and the increasing rate of skin cancer cases, high mortality rate, and expensive medical treatment require that its symptoms be diagnosed early.

The article presents a detailed systematic review of deep learning techniques for skin cancer detection, including artificial neural networks (ANN), convolutional neural networks (CNN), Kohonen self-organizing neural networks (KNN), and generative adversarial neural networks (GAN). The authors conducted a thorough search on well-reputed search engines such as IEEE Xplore, ACM, Springer as well as Google Scholar to extract information relevant to NN techniques for skin cancer detection. They established multi-stage selection criteria and an assessment procedure, and on the basis of the devised search, 51 relevant research papers were selected.

However, there are some potential biases in this article. Firstly, the authors only focused on deep learning techniques for skin cancer detection and did not consider other non-deep learning approaches. Secondly, they only included research papers written in English language published between 2011 and 2021 which may have excluded some important studies published before or after this time frame or in other languages.

Moreover, while the article provides a comprehensive overview of different deep learning techniques used for skin cancer detection, it does not explore potential limitations or challenges associated with these techniques. For example, deep learning models require large amounts of data to train effectively which may not always be available in clinical settings. Additionally, there is a risk that these models may overfit to specific datasets leading to poor generalization performance when applied to new data.

Overall, while this article provides valuable insights into deep learning techniques for skin cancer detection, it is important to consider potential biases and limitations associated with these approaches when interpreting their findings. Further research is needed to explore the potential benefits and limitations of these techniques in clinical settings.

# Topics for further research:

* Non-deep learning approaches for skin cancer detection
* Skin cancer detection using traditional machine learning techniques
* Limitations of deep learning models for skin cancer detection
* Challenges associated with training deep learning models for skin cancer detection
* Generalization performance of deep learning models for skin cancer detection
* Clinical applications of deep learning models for skin cancer detection

# Report location:

<https://www.fullpicture.app/item/b1cac264bb9b47a4a0a801c7ab80432d>