# Article information:

Dynamic visual cortical connectivity analysis based on functional magnetic resonance imaging - Zhao - 2020 - Brain and Behavior - Wiley Online Library  
<https://onlinelibrary.wiley.com/doi/full/10.1002/brb3.1698>

# Article summary:

1. Functional magnetic resonance imaging (fMRI) has been widely used in various aspects of clinical and basic research due to its noninvasive, repeatable, and high spatial resolution advantages.

2. The study of functional connectivity (FC) and effective connectivity (EC) has led to the development of fMRI, with FC describing temporal correlations between spatially remote neurophysiological events and EC reflecting directional connectivity between different neural units or brain regions.

3. Dynamic FC and EC analyses have become a new exploration field in brain connectivity research, as they help humans to have a more comprehensive understanding of the brain's functional and structural organization. Dynamic connectivity technology can better reflect the dynamic participation of different brain regions in the actual brain, which has been suggested to be a more accurate representation of functional brain networks.

# Article rating:

Appears strongly imbalanced: The article is written in a biased or one-sided way, and the information it provides is not trustworthy enough to be considered a reliable source. You should consult other sources to find reliable information on the presented issues.

# Article analysis:

该文章主要介绍了基于功能磁共振成像的动态视觉皮层连接分析。文章提到了fMRI技术的优点和应用，以及功能特异性和功能整合的研究方法。然而，该文章存在以下问题：

1. 偏见来源：该文章没有提及fMRI技术的局限性，如时间分辨率低、信号噪声比低等问题。这可能导致读者对fMRI技术的实际应用效果有过高期望。

2. 片面报道：该文章只介绍了动态连接分析的优点和应用，但没有提及其缺点和局限性。例如，动态连接分析需要选择窗口大小和滑动步长等参数，这可能会影响结果的准确性。

3. 无根据主张：该文章提到“一些研究人员认为（dFC）可能与高级思维或意识密切相关”，但没有给出具体证据支持这一观点。

4. 缺失考虑点：该文章没有讨论数据处理和统计方法对结果的影响。例如，在使用Granger因果关系分析时，如何确定模型阶数是一个重要问题。

5. 主张缺失证据：该文章提到动态连接分析可以作为疾病生物标志物，但没有给出具体案例或证据支持这一观点。

6. 未探索反驳：该文章没有讨论其他学者对动态连接分析的批评和反驳。例如，有研究指出，动态连接分析可能会受到头部运动和呼吸等生理噪声的影响。

7. 宣传内容：该文章过于强调动态连接分析的优点和应用，给读者留下了过于乐观的印象。

综上所述，该文章存在一些偏见、片面报道、无根据主张、缺失考虑点、主张缺失证据、未探索反驳和宣传内容等问题。因此，在阅读该文章时需要保持批判性思维，并结合其他相关文献进行综合分析。

# Topics for further research:

* Limitations of fMRI technology
* Limitations and drawbacks of dynamic connectivity analysis
* Evidence supporting the link between dFC and higher cognition or consciousness
* Impact of data processing and statistical methods on results
* Examples or evidence supporting dFC as a biomarker for disease
* Criticisms and rebuttals of dynamic connectivity analysis

# Report location:

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