# Article information:

Hydrodynamic advantages of swimming by salp chains  
<https://royalsocietypublishing.org/doi/epdf/10.1098/rsif.2017.0298>

# Article summary:

1. Salps are marine invertebrates that swim using a pulsatile jet and can form chains during their colonial life-cycle stage.

2. Asynchronous swimming with multiple pulsed jets yields substantial hydrodynamic benefit due to the production of steady swimming velocities, which limit drag.

3. Laboratory comparisons and in situ flow visualizations support the theory that asynchronous swimming by salp aggregates results in a smoother velocity profile and minimizes fluid interactions between jet wakes.

# 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 "Hydrodynamic advantages of swimming by salp chains" presents a study on the hydrodynamic benefits of swimming using multiple jets, as seen in salp chains. The authors use theoretical analysis and experimental data to support their claims that asynchronous swimming with multiple pulsed jets yields substantial hydrodynamic benefit due to the production of steady swimming velocities, which limit drag.

The article is well-written and provides clear explanations of the concepts being discussed. The authors provide a thorough review of previous studies on jet propulsion and drag, and they offer new insights into the coordination of multiple jets in salp chains. The experimental data presented in the article supports their claims, and the authors make a compelling case for the hydrodynamic advantages of swimming using multiple jets.

However, there are some potential biases in the article that should be noted. For example, the authors focus exclusively on linear chain geometries, which may not be representative of all salp species. Additionally, while the authors acknowledge that periodic speed changes can increase drag, they do not explore potential negative consequences or risks associated with this increased drag.

Furthermore, while the authors present evidence supporting their claims about the benefits of asynchronous swimming with multiple pulsed jets, they do not explore counterarguments or alternative explanations for their findings. This lack of exploration could potentially weaken their argument.

Overall, "Hydrodynamic advantages of swimming by salp chains" is a well-written and informative article that provides valuable insights into jet propulsion and coordination in marine organisms. However, readers should be aware of potential biases and limitations in the study's scope when interpreting its findings.

# Topics for further research:

* Salp species with non-linear chain geometries
* Negative consequences of periodic speed changes in swimming
* Risks associated with increased drag in swimming
* Alternative explanations for the benefits of asynchronous swimming with multiple pulsed jets
* Hydrodynamics of other marine organisms with jet propulsion
* Evolutionary advantages of swimming using multiple jets in salps

# Report location:

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