# The role of extracellular vesicles in cardiac injury and repair

Krijn Vrijsen and ChatGPT August 30th 2023

I used ChatGPT and asked it to write a 2000-word review about the role of extracellular vesicles in cardiac injury and repair. *This is a fictional assignment*.

A transcript of the full chat can be found via this link: <https://chat.openai.com/share/fb2df160-0011-4bc8-86a1-951dab364053>

I first asked ChatGPT what information it would need to write review about the role of extracellular vesicles in cardiac injury and repair. I was impressed about the detailed information it gave me. It provided me with clear instructions what to focus on while writing my review. I then re-entered all the information requirements. This provided me with a lot of “information”, but it became quite repetitive. Detailed information about the results of others was lacking. Next, I asked to write a 2000-word review about the role of extracellular vesicles in cardiac tissue regeneration using all the information above. It became clear that the produced review, despite the amount of information, remained shallow. Most sentences were great introductory sentences but require more explanation using examples. When I asked ChatGPT to include these, the review improved but the provided examples were not useful at all times, and it failed to integrated/combine the different information.

Additionally, I asked (without additional information) to write a research proposal to use extracellular vesicles as a therapeutic strategy to promote angiogenesis in cardiac regeneration. The outcome was again shallow and mostly based on current review studies about the possibilities and limitations of vesicles. It did not focus on the rational to treat/cure cardiac injury.

## Conclusion

If this were a real assignment, I would be inclined to keep it, but I would stress the critical thinking skills in my assessment via:

* the presence of relevant examples;
* the presence of results of others;
* students’ ability to combine multiple results;

I would focus less/not on language, grammar, and the construction of text. This was perfectly in order. However, the “red line” between paragraphs was often not clear.

Additionally, I would check for the references as:

* 3 out of 10 were incorrect (minor and major errors)
* most references were older than 2020
* failed to incorporated the right references at the right time.

In my assessment I would also focus on the process of creativity, including brainstorming and the use of literature. During work meetings/presentations I would ask the students to explain their reasoning and which literature is used, how and why. What made this study relevant etc.?