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Visualising mitochondrial networks in a beating heart cell

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Mitochondria are specialised organelles that produce adenosine triphosphate (ATP), a molecule used by cells as an energy source. Mitochondria form dynamic networks that constantly undergo fission and fusion in response to increased ATP demand. There is a lack of high-resolution data tracking the reorganisation mitochondrial networks in a beating heart cell. We use an agent-based model to simulate a mitochondrial network reorganising in beating heart cell. Our visualisation highlights how mitochondrial networks respond to a variety of stressors such as increased cellular respiration and localised hypoxia.

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