

Radio Waves and DNA



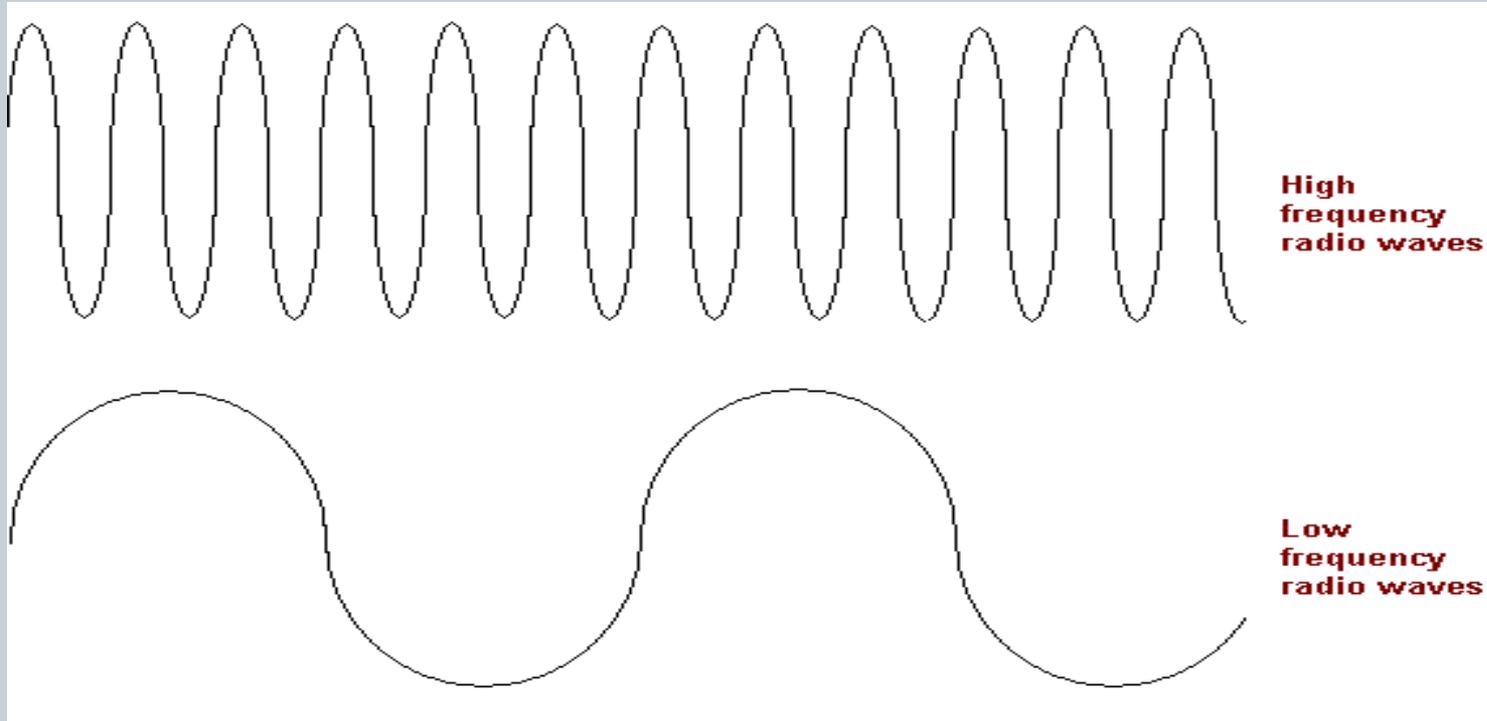
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Radio Waves



- Exposure to radio waves is common due to popularity of electronics
- A radio wave is an electrical signal that travels



DNA



- DNA stores information, both good and bad, in cells throughout our bodies
- Sun's rays can tan skin.
- Microwaves can heat food
- Radio waves can make DNA healthy but too much can “overcook it” or cause “sunburn”



NASA Relevance



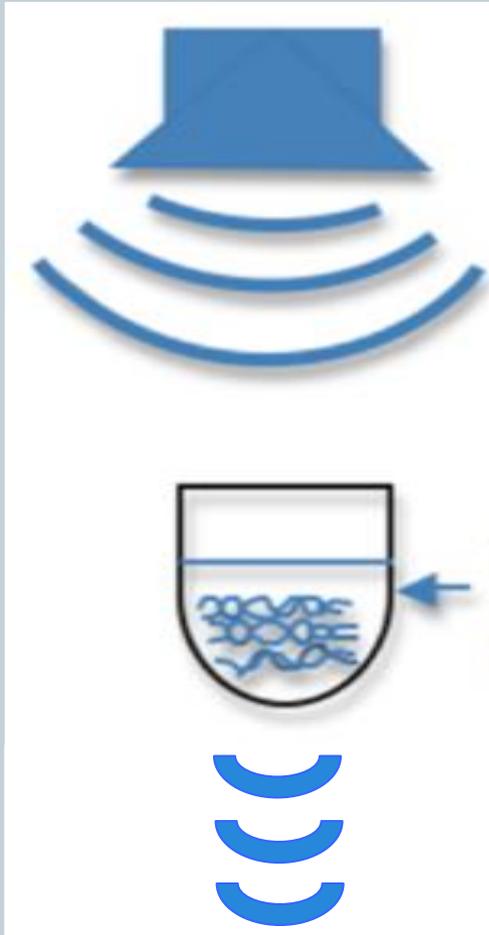
- In space, some of the astronaut's DNA can become “lazy”
- Exercise can be a good countermeasure
- What if there was another way to keep astronauts healthy during lengthy space travel?
- Goal: find radio waves that make DNA less “lazy” in space



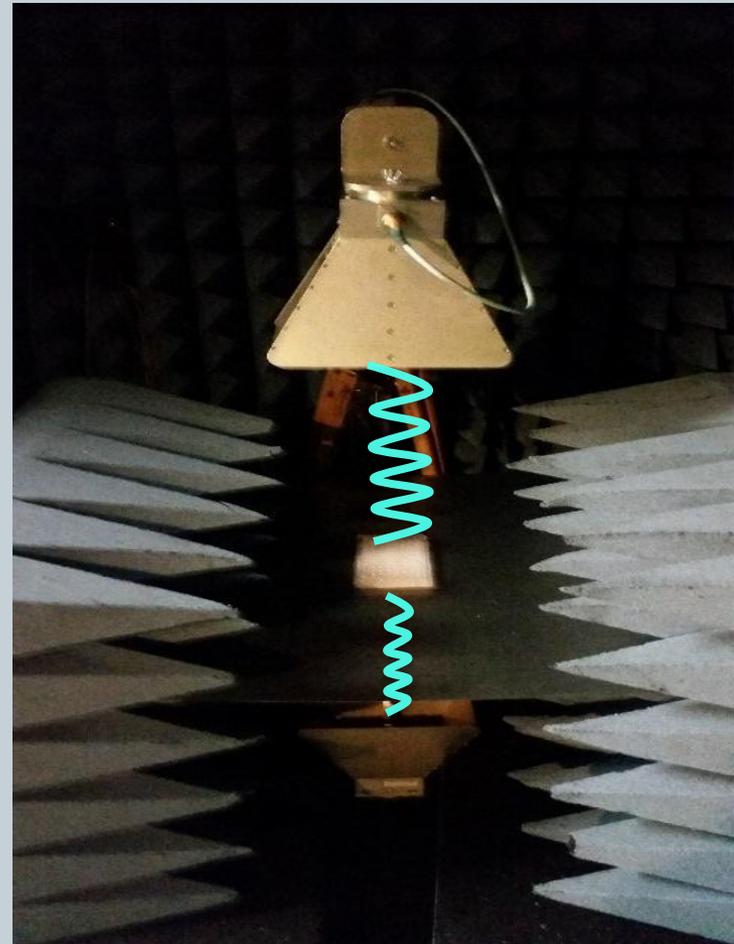
Experiment Demonstration



Experiment Model



Actual Setup



Lessons Learned



- Some radio waves appear to be absorbed by DNA
- You will never know what questions you have until you try.
- Presented at a bioengineering conference where presentation won award
- Published a journal paper
- Started PhD work



Future Plans



- Look more in-depth at frequencies to see if they can make DNA act healthier