

NEXT-TIME QUESTION



Ocean tides are produced by the Moon. Since our bodies are mostly water, doesn't the Moon similarly produce tides in our bodies?

- a) Yes, these are biological tides that affect mood and behavior.
- b) Yes, but negligible (less than are produced by an apple you hold over your head).
- c) No, because the water in our body isn't free to flow.



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Answer: b

Tides are caused by *differences* in gravitational pulls by the Moon (or other celestial bodies) that stretch Earth's oceans. The key to tides is differences in pulls, which is related to differences in distance between various parts of a body and the Moon. Earth's ocean tides are the result of thousands of kilometers difference in distance between near and far parts of the ocean. Scarcely any tides occur in a lake because no part is significantly closer to the Moon than other parts. Likewise for the fluids in your body. You're not tall enough for your head to be appreciably closer to the Moon than your feet. The Moon does produce microtides in your body, however. How strong? Less than an apple held 1/2 meter over your head produces!



Interestingly, tides in the Earth's ionosphere produce magnetic field changes that regulate the penetration of cosmic rays into the lower atmosphere—which can affect the rate of random mutations in living creatures.