

1 **Could we, and should we, settle on Mars?**

2 The Earth and Mars are like fraternal twins that slowly **grew apart**. Four billion years ago, both planets were warm, wrapped in
3 **protective** atmospheres, and carved by water. Today, Mars is an irradiated desert enveloped in carbon dioxide, while its twin is an
4 oxygen rich, **fertile** orb. These **divergent** stories make scientists immensely curious; could we, they ask, live on Mars?
5 Some certainly see Mars as humankind's next planetary home. Sometime in the future, they **point out**, the Earth will become
6 **uninhabitable**, whether due to climbing **temperatures**, **rising** seas, a global nuclear war, an unluckily precise comet, or the
7 transformation of our sun into a red giant. Scientists and aeronautical engineers are already preparing for this cataclysm by
8 building ever-larger rockets and **setting up** simulations of human life on Mars because, once **settlers** get there, a number of **vital**
9 practical **issues** will need to be solved in order for them to survive.

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11 What we need to live on Mars

12 **Oxygen:** What will they breathe? Surprisingly, NASA already has this problem **worked out**. They have developed a reverse **fuel**
13 cell that sucks in the Martian atmosphere and pumps out oxygen. In addition, you have to remember, CO₂ --carbon dioxide, which
14 is 96 percent of Mars' atmosphere -- CO₂ is 78 percent oxygen.

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16 **Water:** Data from orbiters tell us that there are huge **amounts** of frozen underground water on Mars. If only the ice at the poles on
17 Mars **melted**, there would be enough water to put most of the planet under 30 feet of water. True, it would take a lot of **effort** to
18 get this underground ice out. However, there is a device already in **existence** that would help to get water more easily from another
19 **source**. It's called a dehumidifier. Mars' atmosphere is often 100 percent **humid** and this device could **extract** all the water
20 needed simply from the atmosphere on Mars.

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22 **Food: Initially** the settlers would use hydroponics to grow food, but that would **provide** no more than 15 to 20 percent of food
23 **needs**, until water is running on Mars and there is the **capability** of planting crops. In the meantime, most food would arrive from
24 Earth in dried **form**.

25
26 **Shelter:** At first, the settlers could live in **inflatable**, **pressurised** domes and the landers themselves. Nevertheless, this would
27 really only work at night because during the daytime there is too much cosmic and solar radiation. It turns out that the soil on Mars
28 itself is perfect for making bricks. Just add polymer plastic and water, microwave the soft bricks to **harden** them, and you can
29 build buildings with really thick walls. Alternatively, they may choose to live underground in the many caves and lava tubes of
30 Mars.

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32 **Clothing:** On Earth we have miles of atmosphere piled up on us, which creates 15 pounds of **pressure** on our bodies at all times
33 that we constantly push out against. On Mars, there is hardly any atmospheric pressure. So, NASA **technologists** have created a
34 stretchy, tight-fitting space suit to keep the wearer's body together, block radiation, and keep them warm.

35
36 Should we settle on Mars?

37 So, it seems we could actually live on Mars, but don't we have more **immediate** priorities? This takes me back to meeting the
38 moral philosopher, William MacAskill, a professor at Oxford University. He told me then that it was difficult, morally, to choose
39 between short-term **interventions** and long-term projects. Donating mosquito bed nets to areas **affected** by malaria will save some
40 lives almost **immediately**, but funding an environmental lobbyist to **persuade** key international leaders to fight climate change,
41 might save millions of lives further into the future.

42 If you **extend** this logic even further, one of the most moral projects might be to prepare for interstellar travel. After all, if the Earth
43 becomes inhabitable—whether in 200 years or in 200,000 years—we will suddenly go extinct. However, if the human species has
44 already spread to other planets, we will escape this **permanent** eradication, thus saving millions—possibly trillions—of lives that
45 would come into existence after the demise of our first planet. So, it seems, not only could we **settle** on Mars, but there is a
46 **convincing** argument that we should.

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48 Adapted from [The Atlantic](#) and [TED](#)