

### Complete the text with one suitable word.

In 1996, 56 volunteers took part \_\_\_\_\_ a study to test a new painkiller called Trivaricaine.

On each subject, one index finger was covered in the new painkiller while the \_\_\_\_\_ remained untouched. Then, both were squeezed in painful clamps.

The subjects reported that the treated finger hurt less \_\_\_\_\_ the untreated one. This shouldn't \_\_\_\_\_ surprising, except Trivaricaine wasn't actually a painkiller, just a fake concoction with no pain-easing properties at\_\_\_\_\_.

What made the students so sure this dummy drug \_\_\_\_\_ worked? The answer lies in the placebo effect, an unexplained phenomenon wherein drugs, treatments, and therapies that aren't supposed \_\_\_\_\_ have an effect, and are often fake, miraculously make people feel better.

Doctors \_\_\_\_\_ used the term placebo since the 1700s when they realised the power of fake drugs to improve people's symptoms. These were administered when proper drugs weren't available, or if someone imagined they were ill. In\_\_\_\_\_, the word placebo means "I shall please" in Latin, hinting at a history of placating troubled patients.

Placebos had to mimic the real treatments in order \_\_\_\_\_ be convincing, so they took the form of sugar pills, water-filled injections, and even sham surgeries.

Soon, doctors realised \_\_\_\_\_ duping people in this way had another use: in clinical trials. By the 1950s, researchers were using placebos as a standard tool to test new treatments. To evaluate a new drug, \_\_\_\_\_ instance, half

the patients in a trial might receive the real pill. The other half would get a placebo that looked the same. Since patients wouldn't know whether they'd received the real thing or a dud, the results wouldn't \_\_\_\_\_ biased, researchers believed. Then, if the new drug showed a significant benefit compared \_\_\_\_\_ the placebo, it was proved effective.

Nowadays, it's less common to use placebos this way because \_\_\_\_\_ ethical concerns. If it's possible to compare a new drug against an older version, or another existing drug, that's preferable to simply giving someone no treatment \_\_\_\_\_ all, especially if they have a serious ailment. In these cases, placebos are often used as a control to fine-tune the trial so that the effects of the new versus the old or alternative drug can be precisely compared.

But \_\_\_\_\_ course, we know the placebos exert their own influence, too. Thanks to the placebo effect, patients have experienced relief from a range of ailments, including heart problems, asthma, and severe pain, even \_\_\_\_\_ all they'd received was a fake drug or sham surgery.

We're still trying to understand how. Some believe that instead of being real, the placebo effect is merely confused \_\_\_\_\_ other factors, like patients trying to please doctors by falsely reporting improvements. On the \_\_\_\_\_ hand, researchers think that if a person believes a fake treatment is real, their expectations of recovery actually do trigger physiological factors that improve their symptoms.