The ultimate aim of our experiment was to collect data in a small scale experiment to prove that in a real world environment the placebo effect was real.

The placebo effect has the power to physically alter the way that the human body functions. It could unlock the door to advances in medicine and sport that take advantage of this incredible power. But what really caught our attention was the potential to prevent depression which today has become an increasing issue amongst our generation.

**Method**

**Day 0** - Note to all candidates sent will ask Sunday normal activity

**Day 1**
Subject gives their daily information (caffeine intake, hours of sleep etc.) Subject X given nothing to take, and is tested on the 3 reaction tests. Times are recorded, averages calculated. Subject is released.

**Day A**
Subject X is given 2 200mg caffeine tablets, this is within safe limits (6). Subject is then given 30 minutes minimum for the caffeine to take effect. Subject is then given 3 reaction tests in random order, and tested 3 times on each one. Reaction times are recorded, and averages calculated. Subject is then released.

**Day B**
Subject X is given placebo sugar tablet, and is told that it is a 400mg (different brand) caffeine tablet. Then subject is given another 30 mins, before being tested on the 3 reaction tests (again, in a random order). Reaction times recorded, averages calculated. Subject is released.

**Day A & B random order**

**Conclusions**

-We proved the existence of the placebo effect (67% of all test subjects, which decreased significantly between control and the placebo & caffeine).
- Males had a faster reaction time on average compared to women (Although scientists have no idea why.).
- The more caffeine a person regularly has, the lower their change in reaction time (Shown with the PMCC* of -0.74).
- One person had no change in reaction times (Subject B), however they also had the highest intake of caffeine, which may be one of the reasons this happened.

How we could take it further

If we were to take the experiment further and had access to any equipment we wanted we could use blood tests to determine adrenaline and glucose levels in the blood. This could have given us to an idea of how the placebo works with caffeine and allowed us to control for diet. We could have also used eye-tracking software as an alternative to online tests to measure reaction times. This would have made repeats easier and removed variation in computer and internet speeds.

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