# In house Pre-testing for Sports performance and fatigue

Preliminary study report

A randomized single-blind placebo-controlled testing was chosen as a method for evaluation of the impact from exposure to FlexBEAM, Red Light Therapy (RLT) device. This study was designed to elicit the best treatment approach that has maximum impact on endurance in muscular performance until reaching fatigue and recovery. To eliminate gender difference, both male and female were recruited for this study.

To minimise the variability in factors that could affect the performance and recovery, a patient received the *FlexBeam1-effectivie*, the *FlexBeam2-sham*, and the *FlexBeam3-sham* in a randomized blind way with a period of three days between each test. The use of two sham devices helped to minimuse fluctuation in terms of performance in every participant in the study.

A performance was measured by perfroming *lateral pull ups until fatigue* in the uniformal way, loading fixed 20kg.

The examiner recorded a *number of sets* and *time*. The FlexBEAM was applied over the target muscles in four places, totalling *40 minutes* of the exposure time.
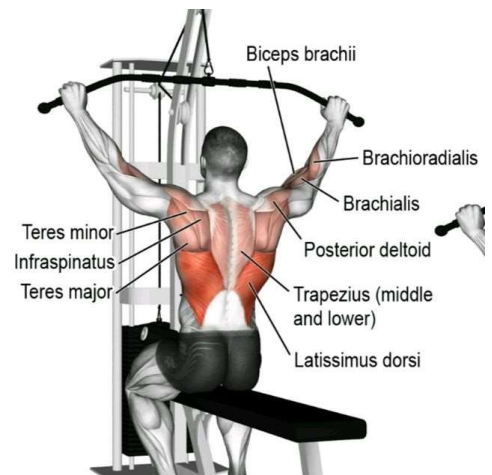
Picture 2 – Lateral pull Up

The measure was done for each testing subject at first, *at a baseline*.

Picture 1 – Positions of FlexBEAM Effective and sham

After the FlexBeam (effective or sham) application, the performance was measured *immediately*, then repeated again after *1 hour* and again, after *24 hours*

with the aim to identify the best outcome. The study participants followed exactly the same protocol, the same gym equipment for exercise, the same workload (20kg) and the same time of the day, in the evening.

Instead of two testing subjects, three participants were enrolled in case one of the participants drops out. So, total of *three* healthy different ages and sexes participants enrolled to this study. Each of them had three days in between FlexBEAM sessions. In this study FlexBEAM was applied *prior* exercises. To ensure a reproducibility of the data, a fourth subject will be enrolled at a different time and his data will be compared with the data from three subjects that is already obtained.

The raw collected data is displyed in the Table 1, while the Chart 1 - 5 is a graphical representation of this data.

Conclusion

The best positive outcome occurs after *1h* from the application of **the *effective FlexBeam*** (F1), moreover, the best performance when compared to the baseline was consistently observed after the application of the effective FlexBeam (F1). The FlexBeam sham (F2, F3) demonstrates no change in physical performance and comparable with the baseline data. The effective FlexBEAM (F1) increases endurance or performance (more exercise sets until fatigue) compared to sham devices used in this study and is in average increases performance by *~45%* when compared with the baseline. There are minimal fluctuations between both FlexBEAM sham devices (FB1, FB2) at 1hour point of performance measurement, in contract, there is a significant increase in the effective device, FlexBEAM (FB1) at 1hour point.

Raw data:

FlexBEAM type	Baseline	F1 - 0h	F1 - 1h	F1 - 24h	F2 - 0h	F2 - 1h	F2 - 24h	F3 - 0h	F3 - 1h	F3 - 24h
Female	52	61	**70**	59	51	40	37	49	55	41
Male 1	203	222	**252**	231	141	112	134	154	159	155
Male 2	110	175	**195**	160	119	101	119	107	111	106
Total	365	*458*	*517*	*450*	*311*	*253*	*290*	*310*	*325*	*302*

F1 - FleaxBeam1 effective
F2 – FleaxBeam2 sham
F3 – FleaxBeam3 sham
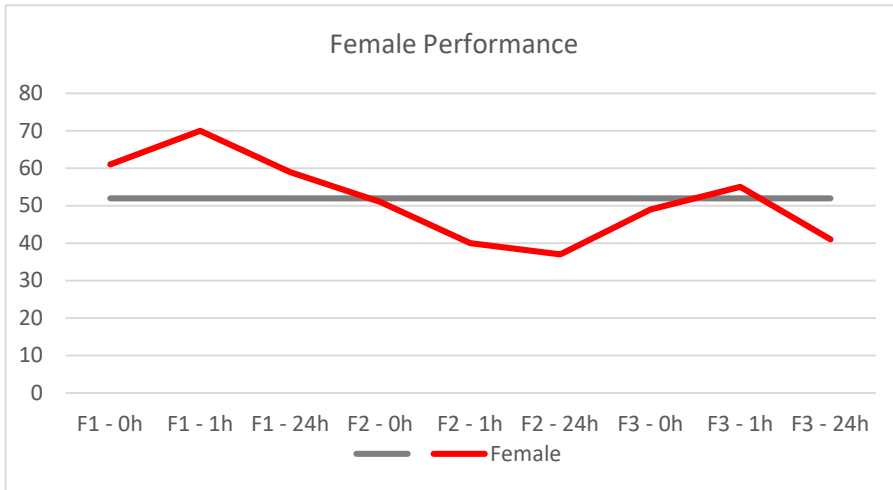
Table 1 –Number of sets performed in the study

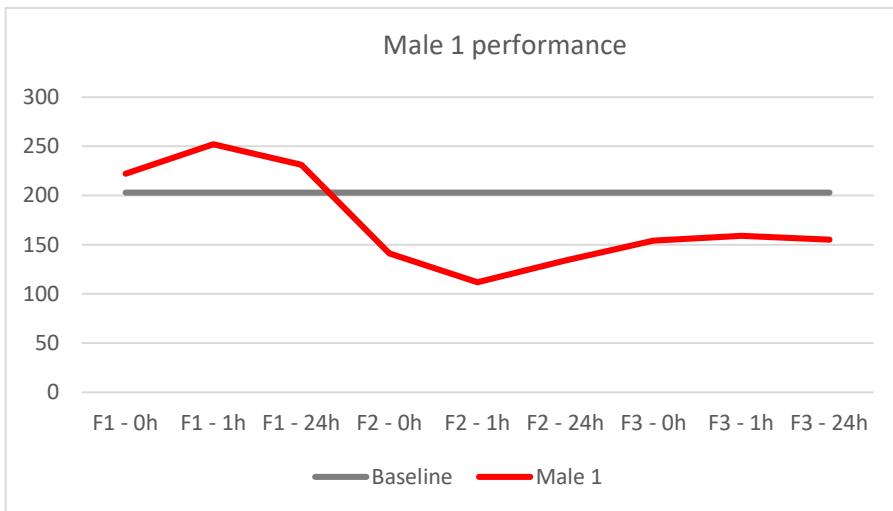Chart 1 –Number of sets against baseline participant 1

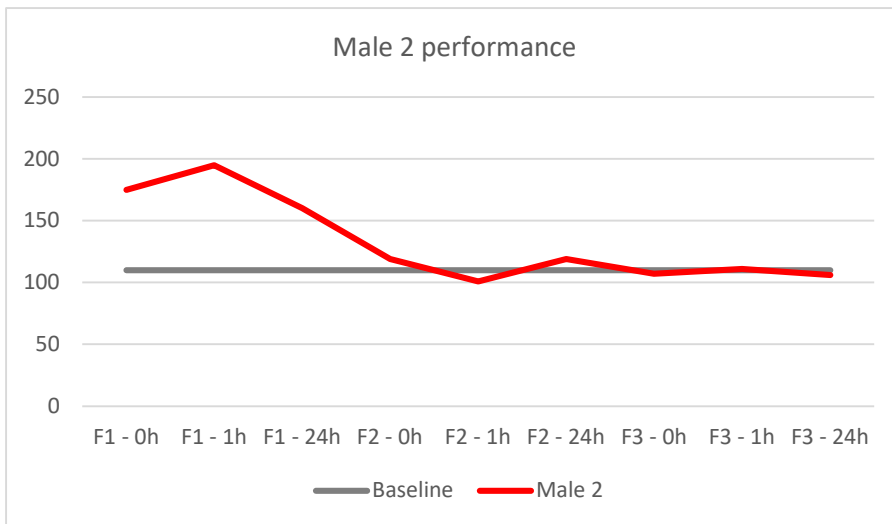Chart 2 –Number of sets against baseline participant 2

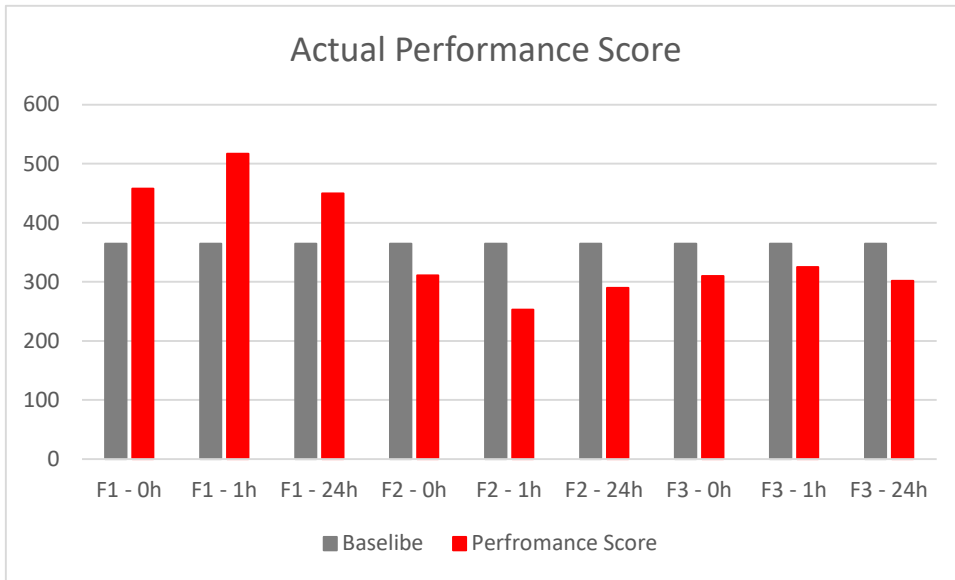Chart 3 –Number of sets against baseline participant 3
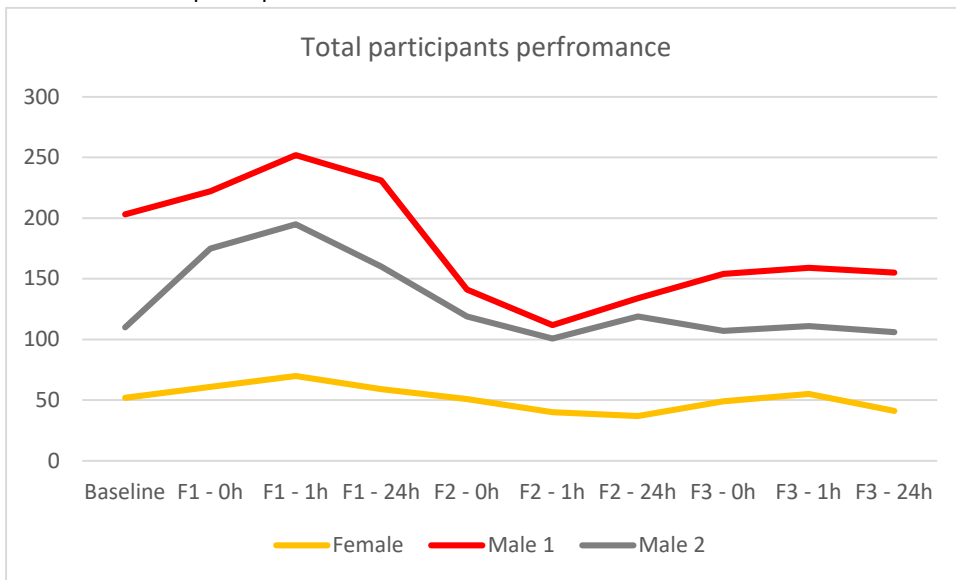
Chart 4 – Total number of sets against baseline in all participants

Chart 5 – Total number of sets against baseline in all participants