The Improvement and Mockup of Rebound Board of Table Tennis

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ABSTRACT
Recreational activities can reduce stress and mitigate the consequences of a sedentary lifestyle. Table Tennis (ping pong) is an ideal recreational activity as it is suitable for all ages, the equipment is simple and facilities are easily accessed even in incumbent weather.

We pursued two objectives in this study. The first was to create a better-functioning rebound board that enables a single player game. The second objective was to compare the functions of our rebound board with those of a traditional rebound board. It was hoped that our rebound board might improve the technical skills of players by training them to perform loop drives while also enhancing control and improving return strokes.

We first analyzed the strengths and weaknesses of existing rebound boards to confirm which functions would be necessary to the improved rebound board. The final design has interchangeable rubber coating and the distance, height and angle can be adjusted. The board is assembled using G-clamps, thereby creating a better-functioning, adaptable rebound board. The resulting board allows offset axis angle rotation and can even be split into three planes. Conventional rebound boards do not have these functions.

To compare the differences between our rebound board and commercially available rebound boards, we invited 8 table tennis players to test the number of return strokes that they could successfully complete using our board. When planar rubber coating was used, an average of 4.97 strokes could be completed using the commercially available board. The rebound board developed in this study allowed for an average of 5.5 rebound strokes. The rebound board developed in this study can increase the number of practicable maneuvers players can practice on their own, and overall strengthen player training time.

Keywords: rebound board, G-clamp, number of strokes, offset axis angle rotation, table tennis