OmniGYM

Removable barbell for a new compact and folding home multigym

In collaboration with Lifelab and designer Sam Mclintock

The OmniGYM project is a new product development for a new concept in home gym equipment. It provides the benefit of free weights along with all the benefits of traditional exercise machines in one multigym which has the ability to fold up when not in use. Final year Product Design student Sam Mclintock worked closely with the development team at Lifelab to develop a new fitness product.

Building on earlier short term projects with Life-lab, a University spin-out company led by Professor Alison McConnell, the collaboration moved up a gear setting up briefs for four separate final year student projects. The projects focused on concept development of health and fitness products for global markets based on innovative ideas and strong scientific evidence.

Brief

Strength training is important to a long, healthy and independent life; not only can it help reduce the effects of the ageing process but lit can also improve bodily function. The product needed to be able to reduce the effects of the ageing process with the older generation as a focus of the project.

One of the significant problems of many multigyms on the current market is the size and inconvenience in terms of space and weight. Mclintock and the development team at Lifelab were required to conceive, design and implement a system which would provide strength training in the appropriate muscle groups as well as finding a solution that would tackle the problem of size and space.

Approach

Mclintock and the Lifelab team worked closely together to firstly identify the general safety requirements and standards that any fitness equipment must fulfil. This set out clearly for the team the boundaries and constraints which had to be worked with.

User testing of prototypes and computer simulations of design performance provided accuracy and possible situations that could occur. This gave further reassurance of the development of a safe fitness product.

Factors researched for this project include anthropometric and ergonomic factors (physical and cognitive), critical analysis of existing home gym products, parallel products that are of relevance to the applications of the product development, suitable materials and International and British standards that apply to the equipment.

Result

Strength training of large muscle groups with freeweights provides significant health benefits, particularly for older users. The Omnigym concept enables the use of a barbell making freeweight exercises such as deadlifts and squats possible.

The final design proposes a bar attached to vertical belts, which are connected to the resistance mechanism. Additionally, the bar can be removed, allowing other exercises to be undertaken giving a wider range of workout. The ability to fold up into a compact form tackles the issue of size and space, allowing users to store the OmniGYM away when not required.