



# MUSCULAR DYSTROPHY

Association of New Zealand Inc.

Te Rōpū Mate Horokiwa o Aotearoa

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Motomed report of MDA New Zealand

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During the period of 28<sup>th</sup> January and 23<sup>th</sup> February 2004 we have tested the Motomed Exercycle in our National Office. We are a non-profit organization that provides support, advice and advocacy for our clients that are affected with a genetic muscular condition.

### Subjects:

3 people with different muscular conditions have tested this with various options. One person has used it only for the arms, the other two have used the combined option. The other person is mobile. Their age varies between 20 and 32 yrs. Two of them are male, one is female. They have been diagnosed with Becker's Muscular Dystrophy, Spino-Muscular Atrophy and Hereditary Spastic Paresis. The latter two are wheelchair dependent and were unable to move their legs 100% actively.

### Methods:

The neuromuscular physiotherapist has assessed them prior to the intervention. The joints of the elbow, wrist, ankle and knees were measured as well as the length of the hamstrings has been tested in sitting. The stiffness in the legs and the occurrence of spasms has been recorded as subjective findings. All of the participants have read the brochure, therefore this could be not seen as a blind study. Setting individual goals resulted:

- Experiencing what the machine does with their body
- Being able to perform functional skills such as dressing in the morning and transfers faster
- Improve circulation and flexibility of the limbs
- Maintain a certain level of activity at the work place

### Intervention

During 4 weeks each of them familiarized with the machine and were able to exercise at their convenience. The physiotherapist has assisted and has set up the training module the first time and after 2 weeks there was a follow up to see if we could increase any training aspects. They have used the machine during work time, which took between 2 and 28% of the work time. It has been a busy period for some of them during that time of the year.

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They managed to train 1-2x a week, although one person felt reluctant to use it during work hrs.

## Outcomes

- All participants experience this intervention as positive and no pain is felt during or after the session.
- Commitment to work has been a restricted factor in the use of the machine at work place for 2 of them. Although motivation was high, this was still the factor that prevented them to using it.
- It has helped one person to have a relaxed sensation in the legs for about one hr. afterwards. She suggested if it would be used at home, the time to get dressed could be shorter as normal.
- The spasms in the legs have reduced and the muscle tone was only present in the first two sessions as a b-tone.
- Joint range has been tested with no significant improvements for the person that has only used it twice during the 4 weeks. The person with a high use of the machine had improvements of her joints of the elbow (baseline tested at 10 degrees lack of extension, post-training end of range stiffness). Lack of movement in the ankle was not a restriction for the machine as it cycled very gentle and the constraint was not too high. We even were able to place her ankles straight in the foot pedals after a couple of sessions. At baseline they were in outward rotation and pronated.
- Post-training transfers are easily performed despite a relaxed sensation in the legs.
- All participants had an increase in the time factor during the training.

## Summary

This machine could benefit a lot more clients with muscular dystrophy if used under supervision and with frequent check-ups. This machine could be used in health centers, physiotherapy departments or hospital out patient settings where these clients could visit for training. However, regarding functional skills there can be some benefits as well for the use at home. Funding is a big aspect for this client group and this has limited the use of the machine significantly. Transport to the health centers is also costly if this will be on a regular basis. MDA can help to find solutions.

The physiotherapist and the participants are satisfied with the outcome and the possibility to use it. We hope the Motomed can be introduced in other parts of the country as well. She is happy to comment and assist in the future as a reference for medical health professionals and others who serve our clients.

Yours sincerely,

Louise Kuebler (neuromuscular physiotherapist)

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