

# Balance Better

## *The Dura Disc System*



### ANKLE & FOOT REHABILITATION

#### INTRODUCTION

Generally rehabilitation programs can be divided into 5 stages. Each stage is a relative period of time, varying from perhaps 15 minutes for a mild ankle strain to a fortnight or longer with more severe injuries. The purpose of ankle rehabilitation is to:

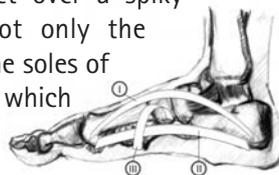
- Increase the strength of the muscles and ligaments around the ankle joint
- Educate the patient about foot/ankle positioning using simple and complex proprioceptive drills
- Prevent stiffness of the joint through effective mobility and stretching

#### TURN ON THE AFFERENT SENSORS IN THE FEET AND ANKLE



Ankle injuries are often associated with lack of stimulation of the foot due to wearing shoes regularly and walking on flat domestic or industrial flooring.

Rolling the soles of the feet over a spiky massage ball, stimulates not only the pressure and pain senses of the soles of the feet but also the tendons which control the arches of our feet. It may also help to reduce pain and swelling.

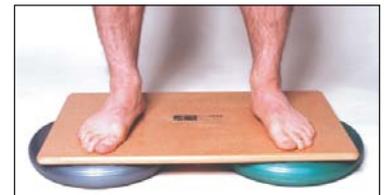


Three Arches of the Feet

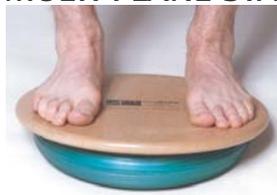
OVERVIEW OF STAGED REHABILITATION						
No.	Exercise Profile	I	II	III	IV	V
1	Ice, compression and elevation	x	x	x	x	x
2	Supportive taping or splinting to suit injury	x	x	x		
3	Gentle dorsiflexion and plantar flexion (not with severe injuries)	x	x	x		
4	Sitting with feather weight bearing	x	x			
5	Achilles stretching with towel	x	x	x	x	x
6	Isometric peroneal exercises to eversion (advance to resistance)	x	x	x	x	x
7	Weight bearing standing on floor			x	x	x
8	Toe curls (short foot), marble pick-up	x	x	x	x	x
9	Roll feet over spiky massage ball			x	x	x
10	Proprioceptive standing on rocker board for single plane ROM	x	x			
11	Proprioceptive standing on Dura Disc with Balance Plate		x	x	x	
12	Proprioceptive standing on Dura Disc				x	x

#### UNI PLANE STABILITY

By using two Dura Discs under a large rectangular board you can limit the range of motion your client can move their ankle. Commence movement in the unrestricted plane first. The client can then gradually change the orientation of their feet to start moving in the injured ankles diminished range of motion.



#### MULTI PLANE STABILITY



Using a single Dura Disc under a round balance plate allows a greater range of motion. Commence movement in the unrestricted plane first. The client can then gradually learn to weight shift from foot to foot while keeping the board under control. Develop motor skills by being able to take the edge of the board close to but not touching the floor. Progression from two to one foot is possible as the patient reaches the final stages of rehabilitation.



#### BI PEDAL MULTI PLANE STABILITY

Using a Dura Disc without a plate stimulates pronation and supination of either foot; weight shift feed back; dorsi and plantar flexion alternatively or simultaneously in each foot. It also stimulates the arches of the feet.



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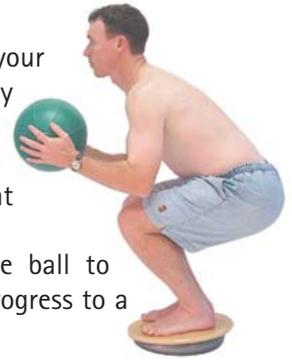
## ADVANCED STABILITY

By altering your clients height Centre of Gravity over the Dura Disc you challenge all of your stabilising system. It can be commenced using a balance plate on the disc and progressed by using just the disc.

The aim is to complete the squat and elevation action with the feet evenly weighted and minimal dorsi or plantar flexion. Speed is critical – you must be able complete the action at a range of speeds without losing your balance.

Your advanced patients and athletes can incorporate a medicine ball to increase the loading of the system – start with a 1 Kg ball and progress to a 10 Kg ball. This is challenging even for a skilled athlete.

The clinician should ensure good form.



## COMPLEX MOVEMENT PATTERNS FOR PRE & REHABILITATION

Using a Dura Disc for complex and sudden load exercises such as lunging is possible for athletes as a strengthening and preventative exercise. The foot will tend to pronate or supinate suddenly so care has to be taken in preparation for the exercise.

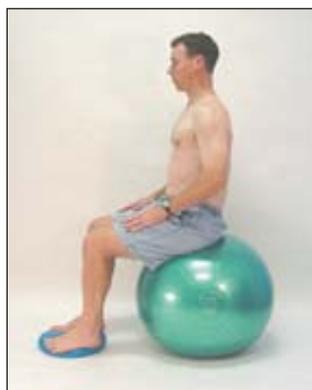
Advanced form can be loaded by holding a medicine ball. The Disc can be placed under the front (as per the diagram) foot or under the rear foot.

Floor exercises are also possible – lie supine on the floor and with knees bent and feet on the disc. Lift your buttocks off the floor while keeping your feet evenly balanced on the Disc. This promotes core stabilisation as well as weight shift through your legs.



## UTILIZING YOUR DISC WITH MEDIBALL PRO

For clients who cannot load bear mobilising the ankle is possible you should use it in combination with mediBall PRO. It can be used as part of an advanced ankle specific program.

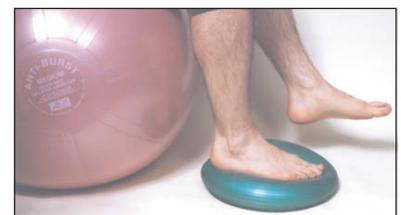


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For clients who can not support their body weight you can start having your client sit on a chair and using the Dura Disc alone for mobilisation. As they progress have them sit on a mediBall PRO.

This progression is important because it encourages the body to incorporate the signals from proprioceptors in the foot, ankle

and leg to be used in the stabilisation of the upper body when seated on the ball. The client gets feedback quickly through core, vestibular and ocular mechanisms to help maintain posture and control of their Centre of Gravity. Practice with both feet on the disc and single foot activities.



Exercises can include hip rotations while stabilising the ankle and knee or the reverse with ankle movement while stabilising the pelvis. Variations can be achieved by having the client stabilising at any point in the chain of action.

For advanced rehabilitation and preventive exercises you should encourage the use of the Dura Disc with any mediBall PRO exercise – the supine bridge shown on the right is a particularly testing exercise even for advanced users.



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