

Peer Review:
Performed July 2006 by 6 ATC Graduate Students at a
Prominent North American University

AB-Inforcer® Review:

1. The AB-Inforcer® is a good mechanism for providing acute patients or novice clients to be able to perform a core stability exercise and be able to be successful self administer a bracing movement.
2. The AB-Inforcer® activates the core stabilization muscle when the body is aligned correctly. It is possible for patients to “cheat” by being improper placed on the machine. With professional supervision cheat mechanics are modified on any training protocol.
3. The success of a novice patient is monitored by the ability to matriculate through the program with minimal disengagements of the feedback lights. The patient will be asymptomatic at the completion of the program.

4. Advantages

- The device is easily portable and can be used in the supine or standing positions.
- It provides visual and audio feedback for the patient, which can be used to teach them to pay attention to their own core contractions.
- Great for addressing right and left deficiencies that may not otherwise be noted due to compensation.
- Can be battery operated to allow for more portability and use away from plug-ins.
- The massage feature would be appreciated by all users.
- The construction of the device appears to have long lasting qualities
- There are many clinical protocols that would benefit from the bio-feedback in this unit: i.e. Wallace, Kendall, Jones and Hodges guidelines and protocols are commonly used by clinics and professionals can follow the following series of progressions outlined below on the AB-Inforcer® and provide superior positioning feedback to users:
 1. Independent activation of transversus abdominis and multifidus.
 2. Independent co-activation of transversus abdominis and multifidus.
 3. Improve precision.
 4. Co-ordination of breathing. (The training we teach for an athletic population starts at this point.)
 5. Function: Static tasks. (Low load)
 6. Function: Light dynamic tasks. (Higher load supine to standing variations)
 7. Local and global co-activation.
 8. Specific functional retraining.

Reference: 2003 seminar notes by Paul Hodges.

5. The AB-Inforcer® is a tool that can be effective in teaching the static bracing procedure. The AB-Inforcer® can also be an effective training device by adding variety in the training program. The committee has discussed that this piece of equipment would not be utilized by every patient and for all core stabilization exercises, but they would integrate the AB-Inforcer® into programs that would meet specific needs of the client/patient.

6. Disadvantages

- Placement can really affect feedback.
- Clothing can affect feedback.
- The angle of the lumbar pad may not match all patients. It could cause discomfort and even force the patient into excessive lumbar lordosis. For flexion biased clients, a small towel on the red triangle modifies the range of lordotic motion of the lumbar contour. This device was not designed for extreme postural dysfunction. A towel under the head of kyphotic users modifies the head position to match each user's neutral. This is determined by each professional.
- Holding the handles next to the head can allow the patient to lift the cervical pad off the table. The point is to innervate each user's deep cervical extensors by intentionally isometrically pressing the head back into the head sensor to keep the sensor close and the head piece attached to the firm Velcro. Attached to a weight bench, this becomes easier to control for those tempted to use arms too aggressively.
- The device is going to require close supervision by the PT/ATC/personal trainer in order to ensure correct usage and feedback. If used at home without correct supervision or instructions, the user could be using the device incorrectly and not receiving beneficial results.
- More clinical research is needed to prove this product works with an indicated population. Conservative claims about the AB-Inforcer® are hosted on the website with 2 clinical studies for review. The EMG evaluation shows that the IO/EO/TO enervation bracing without flattening the lower back and the user hosted had issues bracing and the machine's lights correlate directly to the MVC readings. The force distribution study provides proof that the lumbar curve is comfortable for a wide variety of apparently healthy users.

7. The website www.abinforcer.com provides many references to research supporting the successful development and use of this device. A brief search on Ovid did not provide any evidence that this device, or any similar devices, have been researched for effectiveness. The website did include several testimonials and anecdotal evidence of beneficial use.

8. **Strengthening program** designed for a baseball player with history of low back, trunk and hip problems.

- To be performed 2 days on 1 day off. Weeks 1-2: 4 sets: 8 reps
- Weeks 3-4: 30-60 seconds on: 10-30 seconds recovery: 4 sets of each.
- Weeks 5-6: Use lower level exercises for warm up. Perform quadruped and sport specific motions at 4 sets for 8 reps.

10. Exercise progression

- Bracing (concentrate on just movement) – 4 sets of a progression from 20-60 seconds
- Bracing with breathing - 4 sets of a progression from 20-60 seconds
- Bracing with conversation - 4 sets of a progression from 20-60 seconds

- Supported single hip flexion to 90 hold
- Double hip flexion to 90 hold

- Supported single leg heel touch
- Supported single leg extension
- Supported straight leg lower

- Unsupported single heel touch
- Unsupported single leg extension
- Unsupported straight leg lower

- Unsupported leg with arms flexed to 90
- Unsupported leg with alternating arms to 180

- Quadruped diagonal pattern
- Quadruped ipsilateral pattern

- Quadruped – upper body right rotation
- Quadruped – upper body left rotation
- Quadruped – lower body right rotation
- Quadruped – lower body left rotation

- Quadruped – upper body right rotation / lower body left rotation
- Quadruped – upper body left rotation / lower body right rotation

- Quadruped – with plyo drop push pass to chest
- Quadruped – with plyo drop push pass to right side rotation
- Quadruped – with plyo drop push pass to left side rotation

- Quadruped – mimic throwing pattern
- Quadruped – mimic baseball swing