

BOUNCE
b.a.c.k

Harnessing technology and
exercise intervention
to optimise patient outcomes



Knowledge & Skills + Technology = Better Outcomes

Many thanks for taking the time today to listen to my presentation: Harnessing technology and exercise intervention to optimise patient outcomes

Why move to a Bounce back digital model?



Optimising Quality

Maximising patient compliance

Optimising Clinically based outcomes

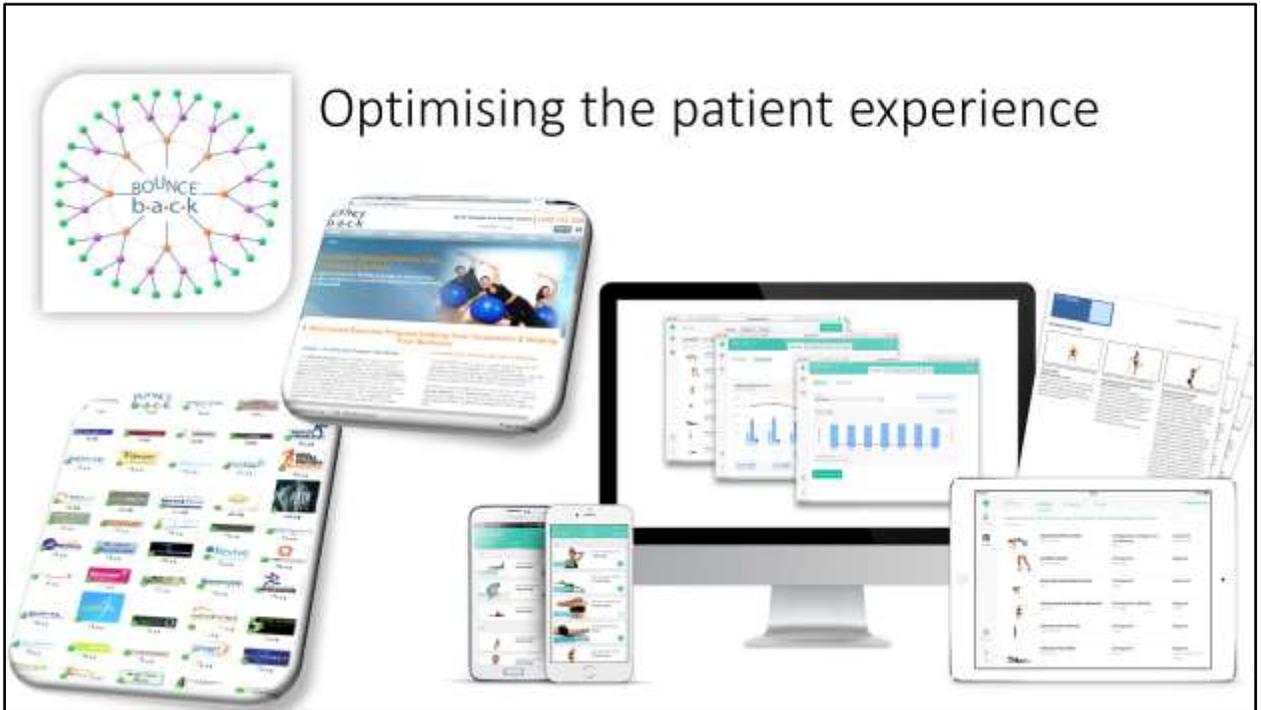
Collaboration to achieve repeatability and continuous improvement

Bounceback.physio

How does Harnessing technology optimise patient outcomes through exercise intervention

Exercise prescription and Targeted rehabilitation is an integral part of Sports Physiotherapy, Exercise Physiology and the multidisciplinary approach of Sports Medicine.

- 1 how do we optimizing Quality of individual ingredients: The Practitioner. Resource tools and how to capture results and feedback.
- 2 The factors affecting client motivation and compliance to a targeted exercise program in private practice setting.
- 3 If we are using technology to optimize clinically based outcomes. Did I achieve the goal? Is there a better way for next time? Is it cost effective and time efficient or dare I say profitable? Managing patient expectations, patient confidentiality.
- 4 Finally utilizing technology as an opportunity for collaboration with others to find the best way towards continuous improvement
- **Poll 1 Do you prescribe exercise in your daily profession?**



Optimising the patient experience

Aiming to optimize the patient experiences started our search for additional resources to motivate the adherence of clients to their exercise program. It was at last years SMA conference in Canberra that I came across Physitrack which had just launched. This led me to investigate digital ways to create clear client goals and a structured and mentored path to achieving optimal function.

A unique technology feature of Physitrack is the integrated patient feedback which appealed to us not only for its functionality but it also effectively addressed in an integrated way, a number of important Quality related issues without becoming a major administrative burden or workload on me as a busy practitioner.

The lead developer of the Physitrack platform Henrik stated that they consider Australian physios as the most sophisticated in the world and that they were happy to provide the technology to Australia as the first English speaking market in the world to make them the most eHealth savvy in the world.

POLL 2



Optimising Quality (The ingredients)



A) TRAINING

Clinician Training and
Clinical Reasoning
Resources



B) GOALS

Clearly defined Goals
and timeline
Structured progressed
Program



C) RESOURCES

Quality of Patient
experience and resources
Tools to measure
progress and outcome
measure via feedback

CHALLENGE 1

Optimising Quality of any exercise rehabilitation program we set up for our clients really involves several key components, just like baking a cake. The ingredients are:

- The clinician
- Setting goals and designing an effective exercise program to achieve them in a set timeframe
- Resources & technology to help the clinician and the patient to achieve their goals and quantify the progress and outcomes.

A) Training and ongoing continuous education



OPTIMISING QUALITY - 1st INGREDIENT the Clinician

A) The knowledge, skill and resources of the clinician is the very first important ingredient. Clinical training and clinical reasoning skills are vitally important and must be continually added to as evidence based knowledge expand our understanding.

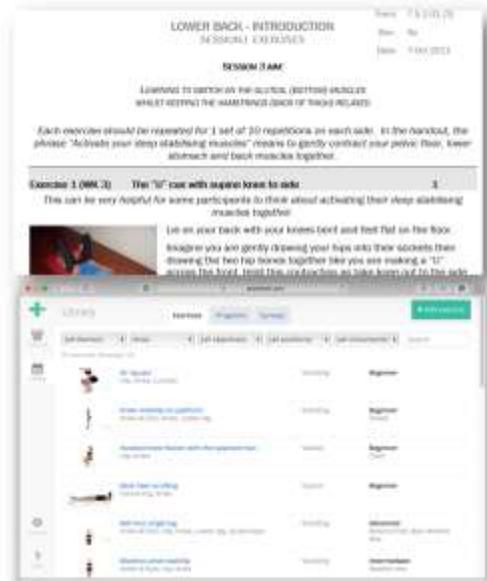
Through Bounce back education For health professional we have aimed to facilitate clinical expertise in assessment, treatment and exercise prescription. We have found however being able to back up face to face teaching with online resources and exercise templates, which can be used the next day in the clinic has really improved transference of knowledge from the lecture theatre to the clinic.

By using online learning technology and tools we are now also starting to explore the ability to continue the dialog with participants and instructors beyond the initial training to provide insight into the learning journey.

B) Structured Goal oriented Program



- Extensive library with exercise videos and exercise programs



OPTIMISING QUALITY 2nd INGREDIENT – The Recipe

The SMART Goal Template provides a very good framework for a effective Exercise rehabilitation program and forces us to consider all aspects of the program that are important to reach a goal.

SPECIFIC & STRUCTURED – Upper /Lower body/hip

MEASURABLE- This can be at an individual exercise level such as number of repetitions, sets, hold time etc to extensive outcome measures. It includes the patients individual goals as well as expected out comes of the program overall and compared to other interventions or programs. Ideally it should also include a measure of compliance which is often difficult to incorporate.

ATTAINABLE – By selecting a suitable program and breaking it into smaller steps and demonstrating that while individualised, it is build on a realistic and attainable framework of steps to reach our goal

RELEVANT – It is important that the most relevant program can be selected from a range of available programs and can be easily modified to make it relevant for the individual patients condition and/or time frame for recovery

TIME BASED - Long enough to track improvement but short enough to maintain

motivation

Moving from quality print to patient App based programs that maintains a clear structure and goals.

LOWER BACK - INTRODUCTION
TABLE OF CONTENTS

Rev: 4e
Date: 7 Oct 2011

LOWER BACK - INTRODUCTION
Thank you for participating in this Bounce Back Class

Muscle info 1	Transversus abdominus (TA) - deep abdominal muscles	TA	2
Muscle info 2	Multifidus (m) - deep back muscles	m	2
Muscle info 3	Pelvic floor muscles (PF)	PF	3
Muscle info 4	Gauteus maximus muscles	gut max	3
Muscle info 5	Gauteus medius muscles	gut med	3

Below are a list of stretches to be incorporated into the patient warm up
All stretches are static, with a 30 second hold, repeated twice on both sides.

Stretch 1)	Soleus Muscle Stretch	4
Stretch 2)	Gastrocnemius Muscle Stretch	4
Stretch 3)	Pectoralis Major Muscle Stretch	4
Stretch 4)	Psoas Muscle Stretch	5
Stretch 5)	Hamstring Muscle Stretch	5
Stretch 6)	Gluteal Muscle Stretch	5

Session 1 aim:

Exercise 1 (Wk 1)	Finding the neutral spine position	1	6
Exercise 2 (Wk 1)	Correct breathing	1	6
Exercise 3 (Wk 1)	Introduction of "U" cue with supine knee to side	1	7
Exercise 4 (Wk 1)	Correct posture and pelvic floor muscles in sitting	1	7
Exercise 5 (Wk 1)	Deep back flexion	1	8
Exercise 6 (Wk 1)	Deep abdominals on your side	1	8
Exercise 7 (Wk 1)	Sitting with stabiliser muscles on and lifting one arm	1	9
Exercise 8 (Wk 1)	Neutral spine in standing	1	9

Session 2 aim:

Exercise 1 (Wk 2)	Correct breathing moving one arm	1	10
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OPTIMISING QUALITY - 2nd INGREDIENT – The Recipe continued

The move to the online technology using Physitrack has allowed us to improve on all the quality points raised before.

I am not a techno geek at all but I felt it was very important to investigate tools that can enhance patient outcomes while making the practitioners job of providing effective exercise programs as efficient as possible.

If our aim as practitioners is to Optimise function than we need to optimise Virtual body responses.

Think of the brain as the real driver of the movement and the body as an Avatar Enhanced learning experiences optimise the body's ability to remodel it own pre programmed muscle activation patterns or Virtual body responses. And we all have our own Virtual body responses adapted to motor pattern history, biomechanical issues, present injuries and Psychosocial factors.

Poll 3: Do you provide programs of exercises for your clients to use at home?

C) Quality Patient Resources



Physitrack
Exercise Intelligence



Clear exercise videos
for **patients**



Powerful tools and
insights for **practitioners**

OPTIMISING QUALITY - 3rd INGREDIENT – Resources and Feedback Tools

For Bounce back, Physitrack as a online exercise prescription platform will allows us to optimise Quality and consistency of exercise advice to the individual client, throughout all the Bounce back agencies in Australia and New Zealand but now the world by creating a global delivery system.

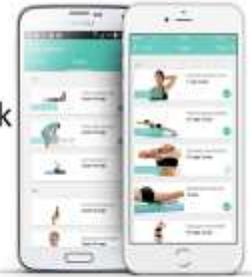
For both the Practitioner and the client detailed written and visual as well as audio instructions tick the learning acquisition boxes for a great variety of individual learning styles.

If your a kinaesthetic learner like many Physios and those involved in utilising exercise in their profession the video format really assists learning, Concentrating on very specific movement patterns as videos, excite mirror neurons in the brain to aid laying down of new and eventually with practice more efficient motor cortex pathways.

Why did Bounce back pick Physitrack as a Digital platform?

- Interactive exercise prescription and adherence tracking platform
- Used by 2,500+ practitioners & 100,000+ patients in 10 countries
- 1,000+ exercise videos in HD & and growing
- Real-time insight in adherence, progress, pain levels & feedback
- Practitioners use the iPad app or web app
- Patients exercises via iOS or via web app
- Program print out feature available too.

 **Physitrack**
Exercise Intelligence.



Clear exercise videos
for **patients**

OPTIMISING QUALITY - 3rd INGREDIENT – Resources and Feedback Tool (Physitrack aspects)

Feedback from the Individual client

Initial Pain & Function Questionnaire (Q-05 Sept-11)

Part 2. Duties and Pain. (Please use only 00-100 Part 2...)

In each circumstance, where 100% is what you did before the injury (eg. florists who are not working, sports people not participating = 0%
 What is your current percentage (%) compared to your Pre-injury percentage (%).

Duties for workers or sports people, activities in life in for others?

Worst Possible	0%	10	20	30	40	50	60	70	80	90	100%	Normal / No Problem

What is your level of pain?

Worst Possible	0%	10	20	30	40	50	60	70	80	90	100%	Worst Possible

Part 3 – Function (Please use only 00-100 Part 2...)

Your SPINE may make it difficult to do some things you normally do. This list contains sentences people use to describe themselves when they have such problems. Think of yourself over the last few days. If an item describes you, tick the Yes box. If an item partly describes you use a half (1/2) mark otherwise mark as No.

Due to my spine:	Yes	1/2	No
1. I avoid heavy jobs eg. Cleaning, lifting more than 5kg or 10lbs, gardening etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I have the pain / problem almost all the time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I have difficulty with normal home or family duties and chores.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I sleep less well.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I need assistance with personal care eg. Washing and hygiene.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. My regular daily activities (work, social contact) are affected.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I require assistance or am slower with dressing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. My sitting is affected.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I only stand for short periods of time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I have trouble reaching / bending down (eg. Pick-up things, put on socks).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



OPTIMISING QUALITY - 3rd INGREDIENT – Resources and Feedback Tool continued

The reason Bounce back has embraced Physitrack is that it allows the client to directly interact with the practitioner via rating effort, pain levels and questions after performing each individual exercise every assigned day.

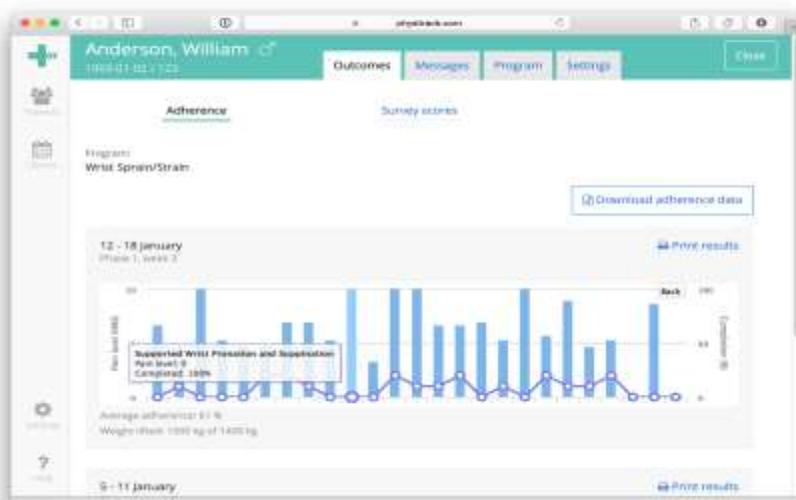
Research into effective learning and changing pre programed patterns within the brain can be enhanced when multi senses are stimulated. This is exactly what we are aiming to do when providing exercise programs for our clients.

Attention to new learning tasks via multi senses and then providing feedback on that specific task creates a higher level of awareness and therefore an enhanced learning experience for the brain. With daily reminders and graphs of the individuals pain levels and compliance stats, there is potential for a higher level of engagement and positive challenges to reinforce compliance.

POLL 3 - Feedback

Feedback for individual healthcare providers

Real-time insight into patient adherence, progress, pain levels and comment feedback



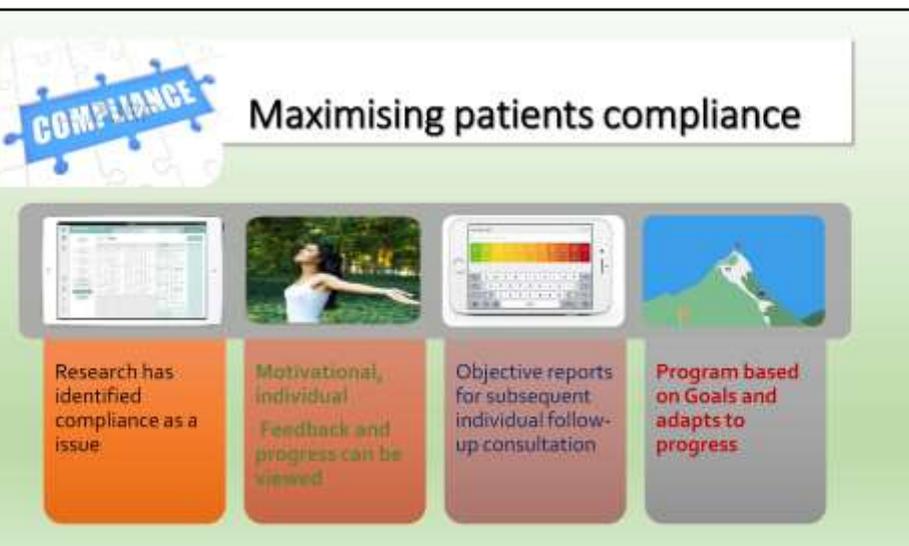
OPTIMISING QUALITY - 3rd INGREDIENT – Resources and Feedback Tool continued

The physitrack platform excited me as it gives the practitioners real time insight into patient adherence, progress in relation to endurance, pain levels and feedback.

Insurance bodies, the occupational health industry and now many private health funds such as HCF are looking for evidence of positive functional outcomes from their financial investment in exercise rehabilitation. In private practice this can be challenging but embracing technology and spending the time to mould it to assess and monitor these key components can result in reliable and very relevant individualised feedback.

Monitoring outcomes is a vital step forward in quality assurance and allows us to adjust exercise programs based on individual feedback.

The aim is to providing initial pre-assessment via online questionnaires and followed by face to face sessions, setting individualised goal based exercise programs with capacity to monitor compliance to adjust exercise program towards optimal functional and independence.



It was discussed at the most recent WCPT in Singapore that compliance to exercise programs is a significant issue and in real terms it is usually a predictor to functional outcomes.

Now in the era of busy lives, social media, blogs and online forums, the challenge is to engage the client to interact with the specifically designed video program that their health professional has set up. Charts of compliance, pain levels and ability to leave messages provides a record of how the client has performed between review sessions and **gives the health professionals tools to adjust, change focus or progress the exercise program.**

Embracing technology and collaborating with Physitrack has been a huge learning curve but it seemed the most effective way forward in continually improve the patient experience and functional outcomes. Our feeling at Bounce back was if we could put in the hard yards and create the exercise programs that can then be utilised efficiently by our Bounce back agents, we can then **monitor patient outcomes of the reproducible programs.** Then with feedback continually refine and individualise programs for a wide variety of musculoskeletal conditions.

Poll 4: How do you currently monitor compliance to your exercise program and pain levels during exercise

Patient reported Compliance

Week 1 of phase 1

Correct breathing supine (as taught in lumbar class) [01010]



Place your hands at the base of your ribs with your thumbs pointing towards the small of your back. Take a deep breath in using your diaphragm, so that your ribs move out into your hands. Now breathe out slowly allowing your ribs to drop and sink downwards. It is important to breathe using your ribs and upper stomach muscles. Use your lower stomach muscles for stabilising your lower back. Keep your neck and

Mon	Tue	Wed	Thu
Completed: ___ / 10 s hold ___ / 10 reps ___ / 2 sets	Completed: ___ / 10 s hold ___ / 10 reps ___ / 2 sets	Completed: ___ / 10 s hold ___ / 10 reps ___ / 2 sets	Completed: ___ / 10 s hold ___ / 10 reps ___ / 2 sets
Pain? ____	Pain? ____	Pain? ____	



COMPLIANCE – Reality

The real issue is you can lead a horse to water but how do you make them drink. Client compliance to a targeted exercise program and monitoring compliance has been an immensely difficult task in private practice.

Professional sporting teams and large athlete focused institutions such as the AIS/ Australian sports commission have developed complex computer systems to monitor their athletes injuries, treatments and results but such resources have not been available to Health professionals at large

GOALS – Motivational Structured Program

20) Sustained lats: phasic gluteals	95
1. Squats with ball holding exercise band with arms just below shoulder height abducted	⑦ 95
2. As above squatting without the ball	③ 95
21) Rotator Cuff – recruitment and basic strengthening	96
1. Training Your Shoulder Stabilisers In Standing	⑦ 96
2. Strengthening Your Shoulder Into Elevation	⑦ 96
3. Positioning Your Shoulder Blade Correctly While Rotating Your Arm	② 97
4. Control Of Arm Movement In Sitting	② 97
5. Strengthening Your Shoulder Muscles Into Elevation	⑦ 98
6. Strengthening Your Shoulder Muscles Into Elevation (Stop sign position)	③ 98
22) Thoracic Spine Extensor Strength	99
1. Prone over ball thoracic spine extension	③ 99
2. Standing back to back with partners, holding exercise band above head, small thoracic spine extension movement	③ 99
3. As per number 2 partners facing each other and moving in to thoracic spine extension against resistance	③ 99
23) Whole body exercises combining main principles	100
1. Standing with one leg on ball and thoracic spine rotation	③ 100
2. Standing with outside leg on ball and thoracic spine rotation away from partner with exercise band	③ 100
3. Standing with inside leg on ball and thoracic spine rotation away from partner	③ 100



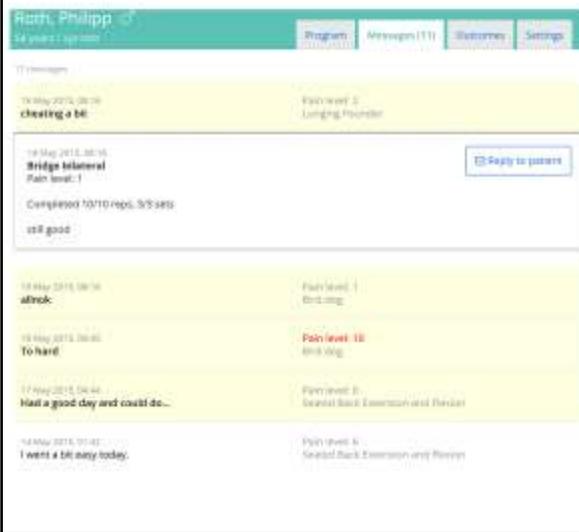
COMPLIANCE – GOALS & motivational structure

The exercise must be perceived as valuable. This is exactly what we are aiming to do when providing exercise programs for our clients based on their individual goals.

Discuss the goals and demonstrate that the program design ticks their function goals

- WORK GOALS
- HOME GOALS
- ACTIVITY GOALS

Individual Feedback – Too much of a good thing ?



- Patients expectations for immediate feedback
- Great resource for documented measurable individual review.



COMPLIANCE – FEEDBACK for Review & Followup

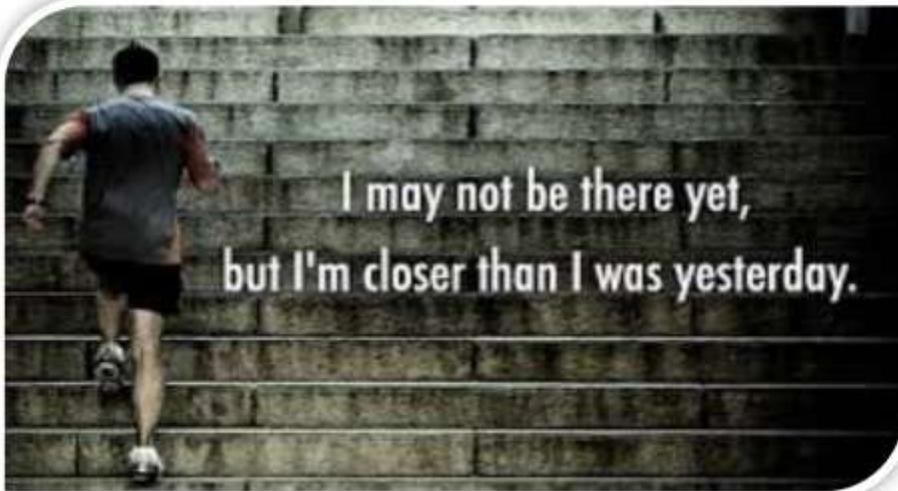
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With daily reminders and **graphs** of the individuals pain levels and compliance stats, there is potential for a higher level of engagement and positive challenges to reinforce compliance.

But controlling expectation of instant feedback is important

BOUNCE[®]
b.a.c.k

Physitrack[®]
Exercise intelligence.



My passion for developing effective reproducible exercise programs in Private practice led me to create Bounce back which now has over 65 sites in Australia, NZ and now London and Denmark running our progressed functional exercise programs for low back, hip, neck and thoracic issues.

The picture captures well the journey I have travelled together with my Bounce back Technical Director & husband Philipp because of the combination of my clinical focus and his professional interest and passion for quality control, continuous improvement and technology.