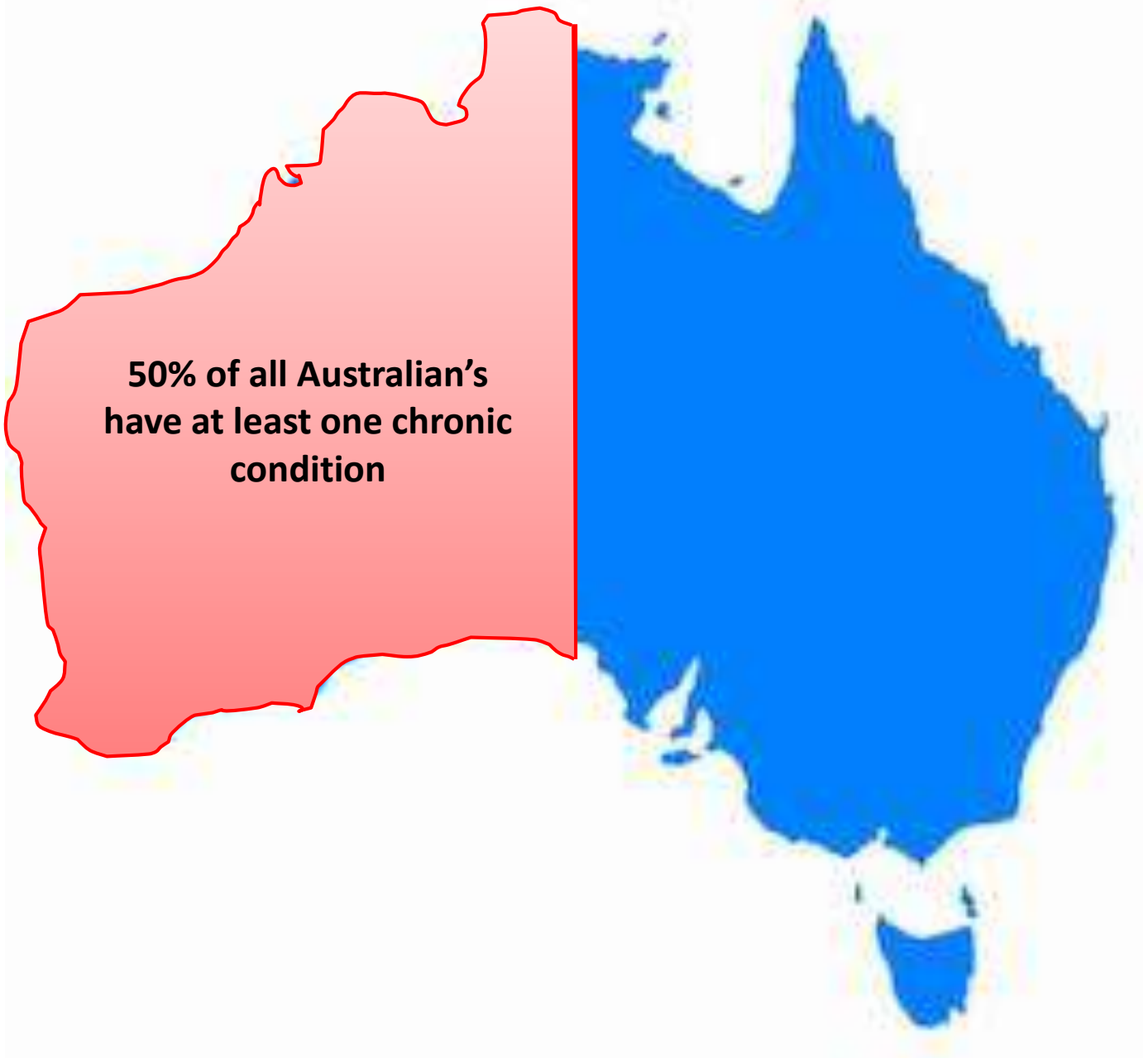
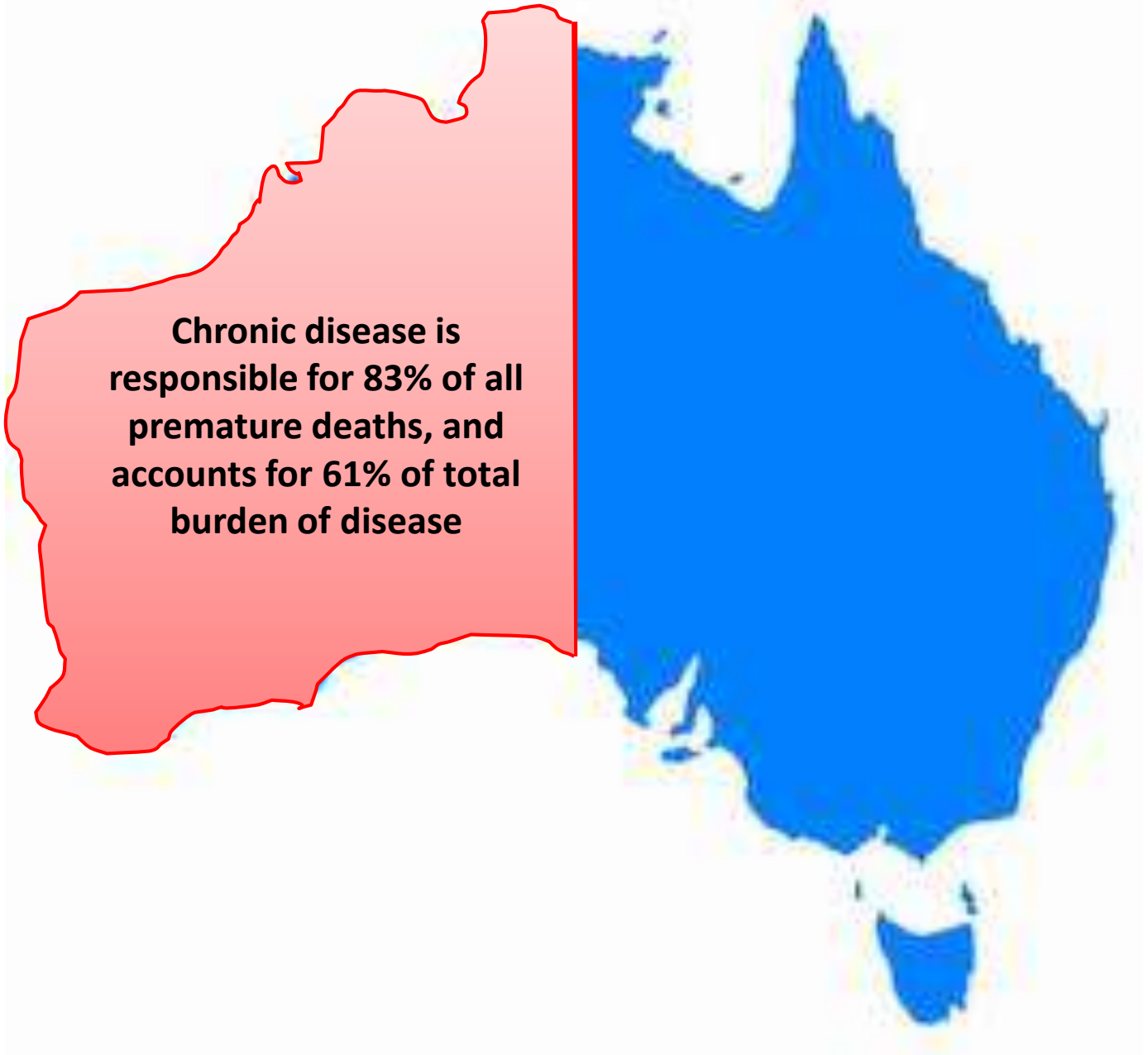
The Thrive Clinic

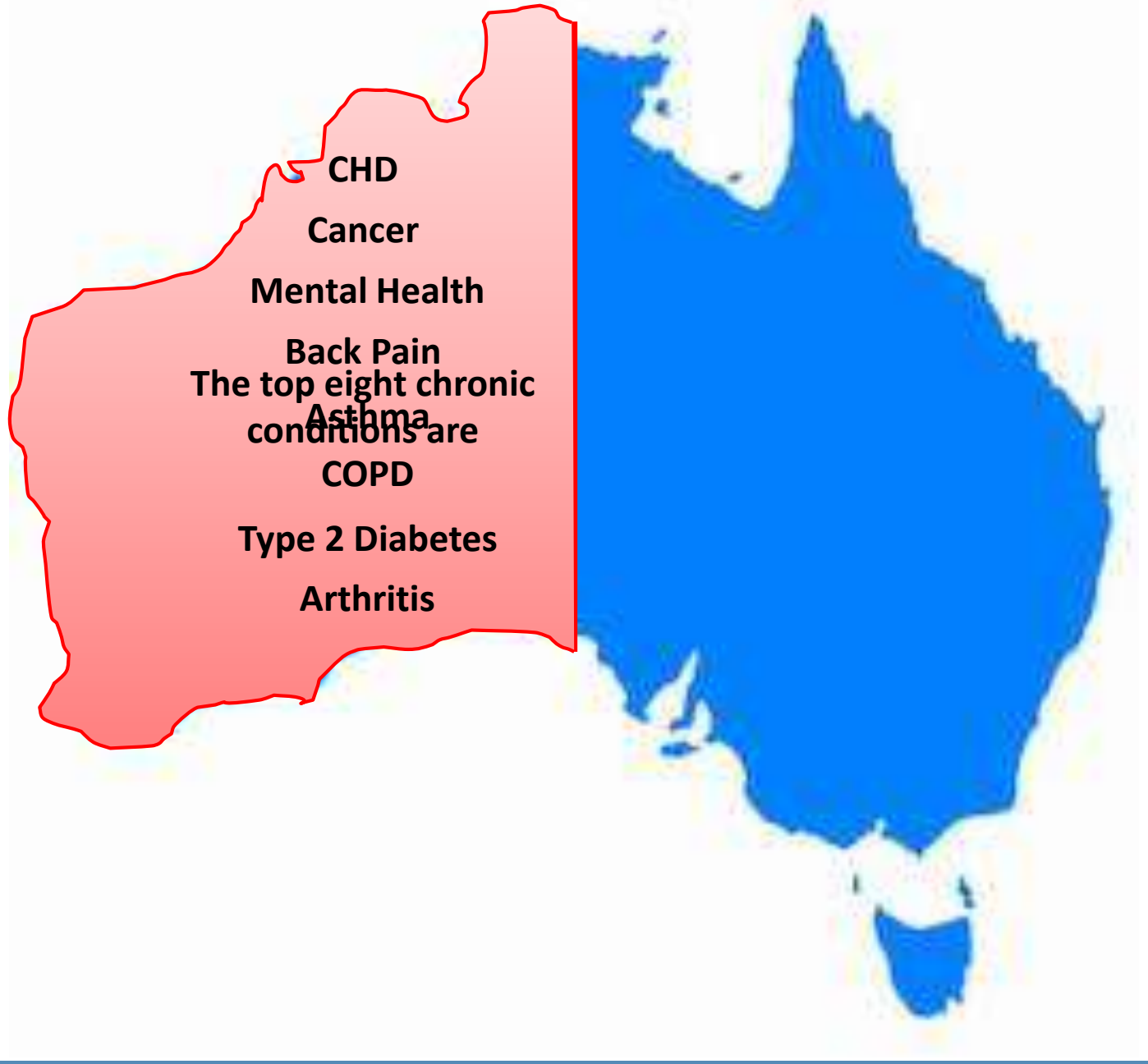
Exercise as medicine in the treatment, prevention and management of mental and physical chronic conditions

Research to clinical practice

Reducing the social, medical and fiscal burden of chronic mental and physical conditions in Australia


50% of all Australian’s have at least one chronic condition


Chronic disease is responsible for 83% of all premature deaths, and accounts for 61% of total burden of disease


CHD
Cancer
Mental Health
Back Pain
The top eight chronic conditions are
Asthma
COPD
Type 2 Diabetes
Arthritis

59.8% have one or more of these chronic conditions

On average, can expect to live 10 years LESS than other Australian's

The top 8 chronic conditions are Responsible for more than 39% of preventable hospital presentations

Of the 4 million Australian's living with a mental health condition…

CHD

Cancer

Mental Health

Back Pain

Asthma

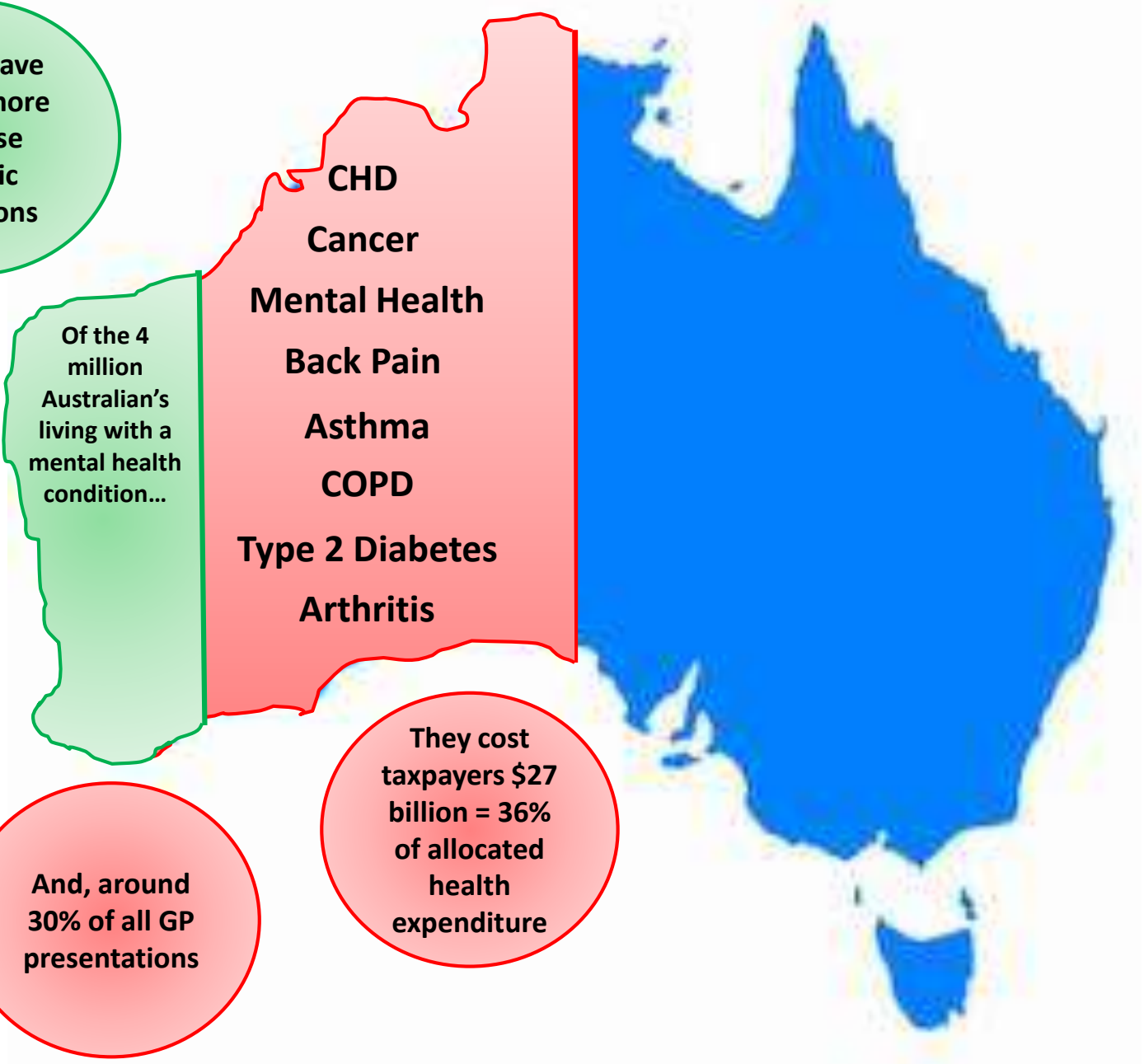
COPD

Type 2 Diabetes

Arthritis

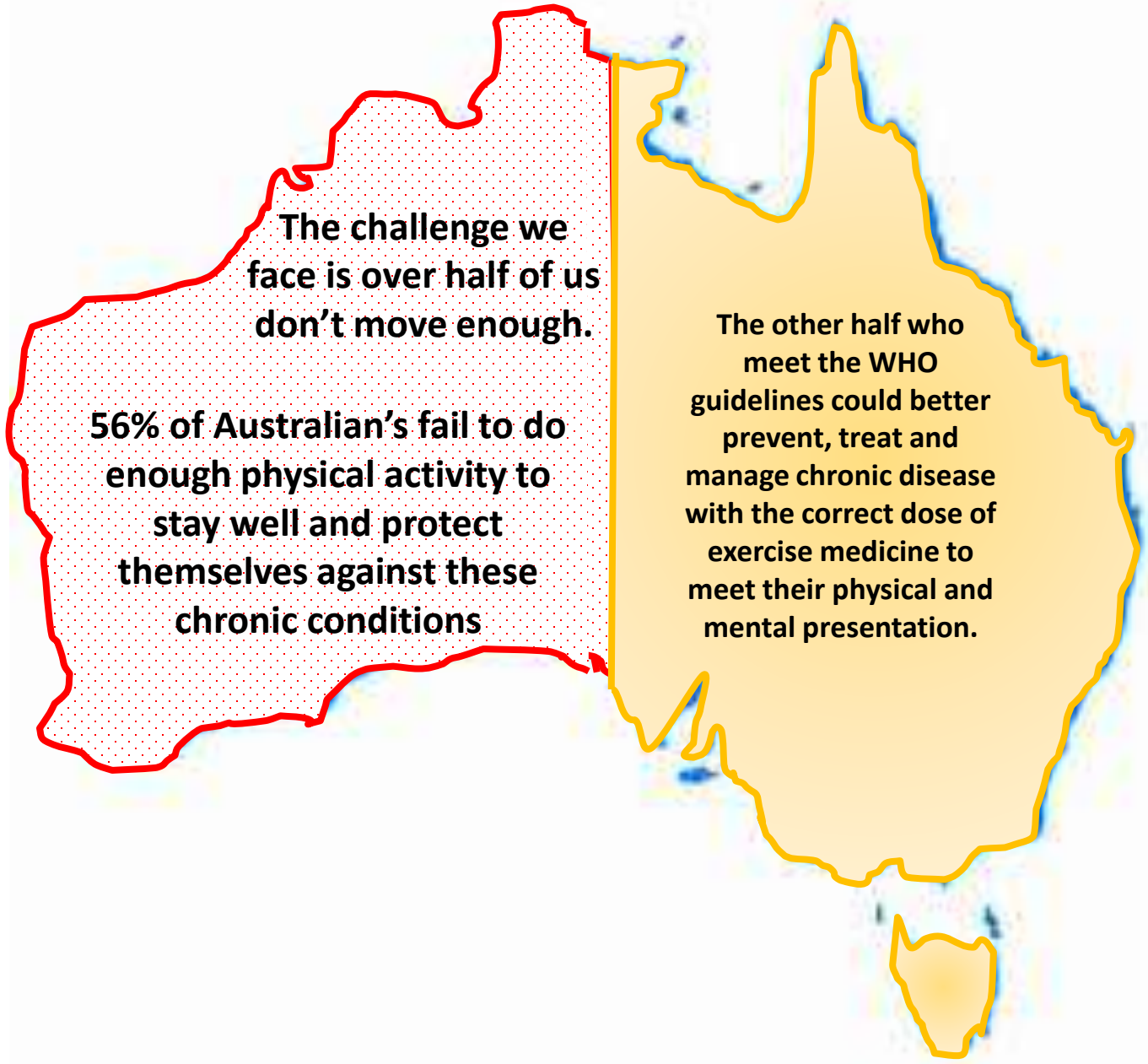
And, around 30% of all GP presentations

They cost taxpayers $27 billion = 36% of allocated health expenditure




The fiscal, social and medical burden of chronic illness is a priority for the Australian Health Department.


There is an indisputable body of research that collectively substantiates the effectiveness of exercise as a primary and auxiliary treatment, management & prevention method to help combat these top eight chronic conditions


The challenge we face is over half of us don't move enough.
56% of Australian's fail to do enough physical activity to stay well and protect themselves against these chronic conditions
The other half who meet the WHO guidelines could better prevent, treat and manage chronic disease with the correct dose of exercise medicine to meet their physical and mental presentation.


Exercise as Medicine:
The cheapest clinically proven medicine that half of us won't take and the other half of us are being poorly self dosed

So, how do we change the way this half of Australia thinks about exercise?

How do we motivate them to do more?

How do we get them to stick with it long enough to realise the positive health outcomes?

These are the questions that needed answering before the Government and private sector could invest in and effectively take on the enormous health challenge the nation is facing.


After 2 years of completing an efficacy
We have some promising
insights.
1. Exercise adherence
2. Motivation to exercise
3. Capacity to work during exercise

That supports the inclusion of an Exercise Medicine intervention as an effective complimentary prescriptive option for GPs and specialists in the treatment of mental and physical co and multi morbidities.

Multimorbidity

A growing concern worldwide, driven by ageing population and growing lower mortality rates.
The coexistence of several conditions, none of which is considered an index condition.

*This is an important consideration for policy makers influencing funding and rebates for patient presentations and claims.

Comorbidity

The co-existence of other chronic conditions with an index condition or primary referring condition, e.g. mental health.

*Currently in Australia Medicare

(5 sessions/year) and private health insurers (varies policy to policy) patient rebates are limited and only available with a referred index condition.

The Thrive Clinic

Research to Practice

Efficacy and compliance of an ‘exercise as medicine’ intervention in the treatment of patients with varied chronic illness. An observational study of GP, medical specialist and self referrals at a community level.

Reducing the social, medical and fiscal burden of chronic conditions in Australia

What have we done?

We have taken the first step in exploring a valuable mental and physical chronic illness exercise medicine service delivery solution that uses an intervention that reflects the findings of research over the last decade. We have taken the best research and trialled it in combination for clinical efficacy.

Key Austrailian research mentions include;

- Dr. Rob Newtons work in exercise oncology and strength & conditioning
- Dr. Steven H. Boutchers work with High intensity interval training
- Dr. Simon Rosenbaums work in Exercise medicine for mental health

Many international specialist researchers are in our references to substantiate the development of our intervention. For more details go to www.theexercisetherapist.com the password for the medical specialist hub is ‘runfree’

Reducing the social, medical and fiscal burden of chronic conditions in Australia

Why have we done it?

We could see a **gap in research translation to clinical practice** of effective exercise medicine for **collective chronic conditions**. We also noted **inactivity levels in population health** and how that impacted our ability to apply research findings in the space of exercise medicine on a national scale. We knew we where limited in what we could achieve until **we could work out a way to engage more Australian's in exercise and movement**.

We could also see a gap in **relevant data collection of the top eight chronic conditions** and the **translation of this data into a fiscal value, cost and impact** each condition has on our purse and our people **individually and collectively.**

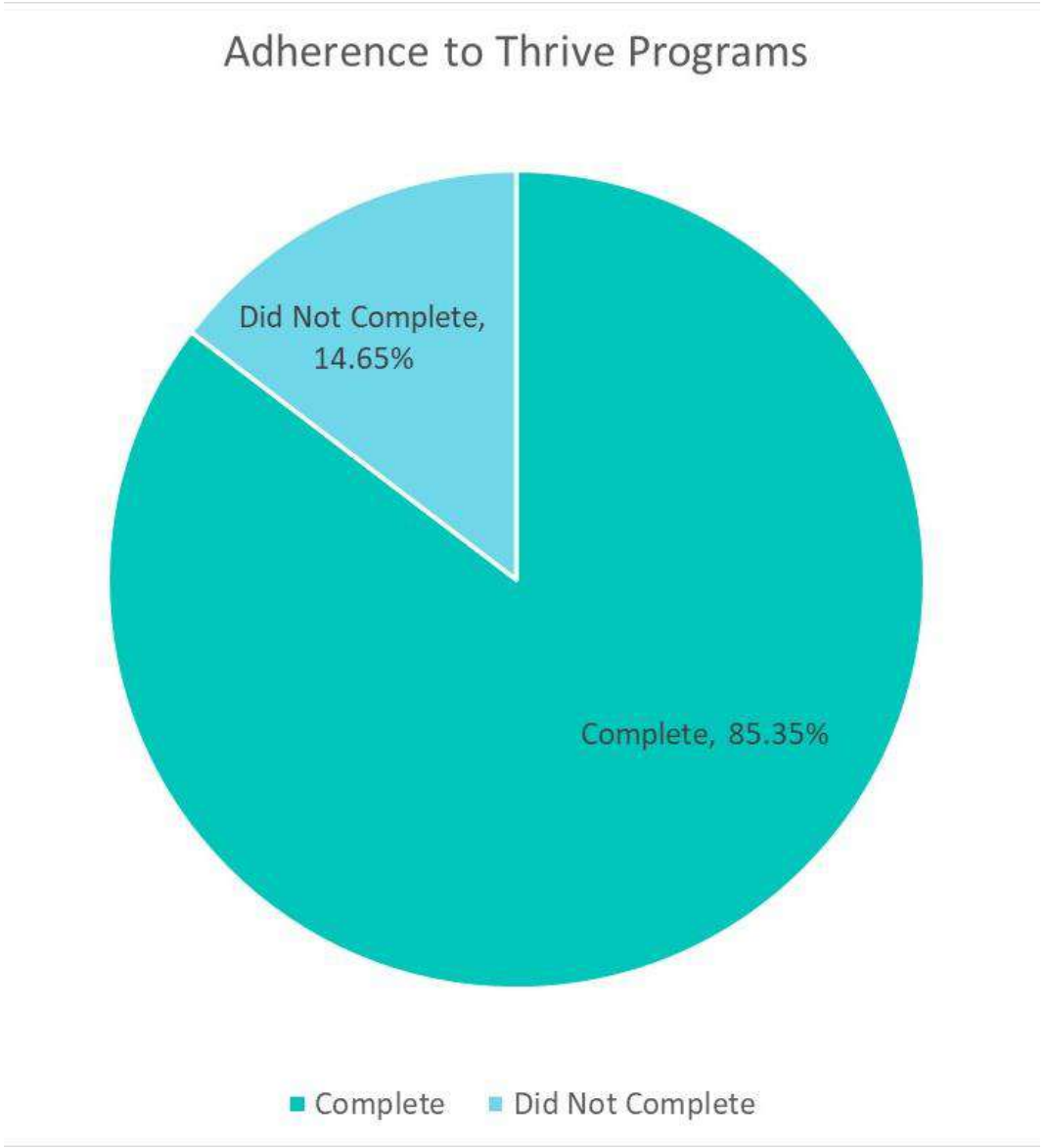
Between the evidence and arguments put forward over the last five years including the more recent **COAG national strategic framework for chronic conditions**, the **mental and physical health report** 2016-18, **The Grattan Report** 2018 and the **equally well mental health commission** call to action, the argument for community based primary care and hospital based primary & secondary care chronic illness treatment, management and prevention service clinics (that can effectively treat and collect accurate data on all of the top eight chronic conditions) is overwhelming.

The **cost effectiveness and clinical treatment efficiencies** of combined prevention, treatment and management service solutions for chronic illness are clear. Such data collection could help map out spending and research priorities. The clinics would be able to **significantly reduce overall costs associated with chronic disease,** prevent secondary chronic disease and help start to untie the knot and **bring clarity to the links between mental and physical chronic illnesses** - **improving the quality of life of all Australians, reducing national health costs and supporting the heart of primary care provision in Australia – the GPs.**

Overview

- 24 months (January 2016 – December 2017), total 198 participants
- Pathology specific information and data was collected relevant to initial presentation
- Of the 198 participants 28.79% where referred by GPs on a CDM or an EPC plan. 6.57% where referred by specialists and 64.65% where self referred.

	Heart Rate	Blood Pressure	Perceived Personal Health	DASS21	MenQoL
Total Participants	109	13	128	41	72
Total Male	22	7	26	8	0
Total Female	87	6	102	33	72
Mean Age	49.66 years	57.46 years	50.70 years	48.51 years	49.56 years



Comparative adherence statistics and figures where difficult to find. There are few comparative clinical exercise programs completed on mass to cross reference.

We do know drop out rates of gym memberships can be as high as 44% and have low usage rates at 27% Leaving only 29% effectively active.(ABS 2017).

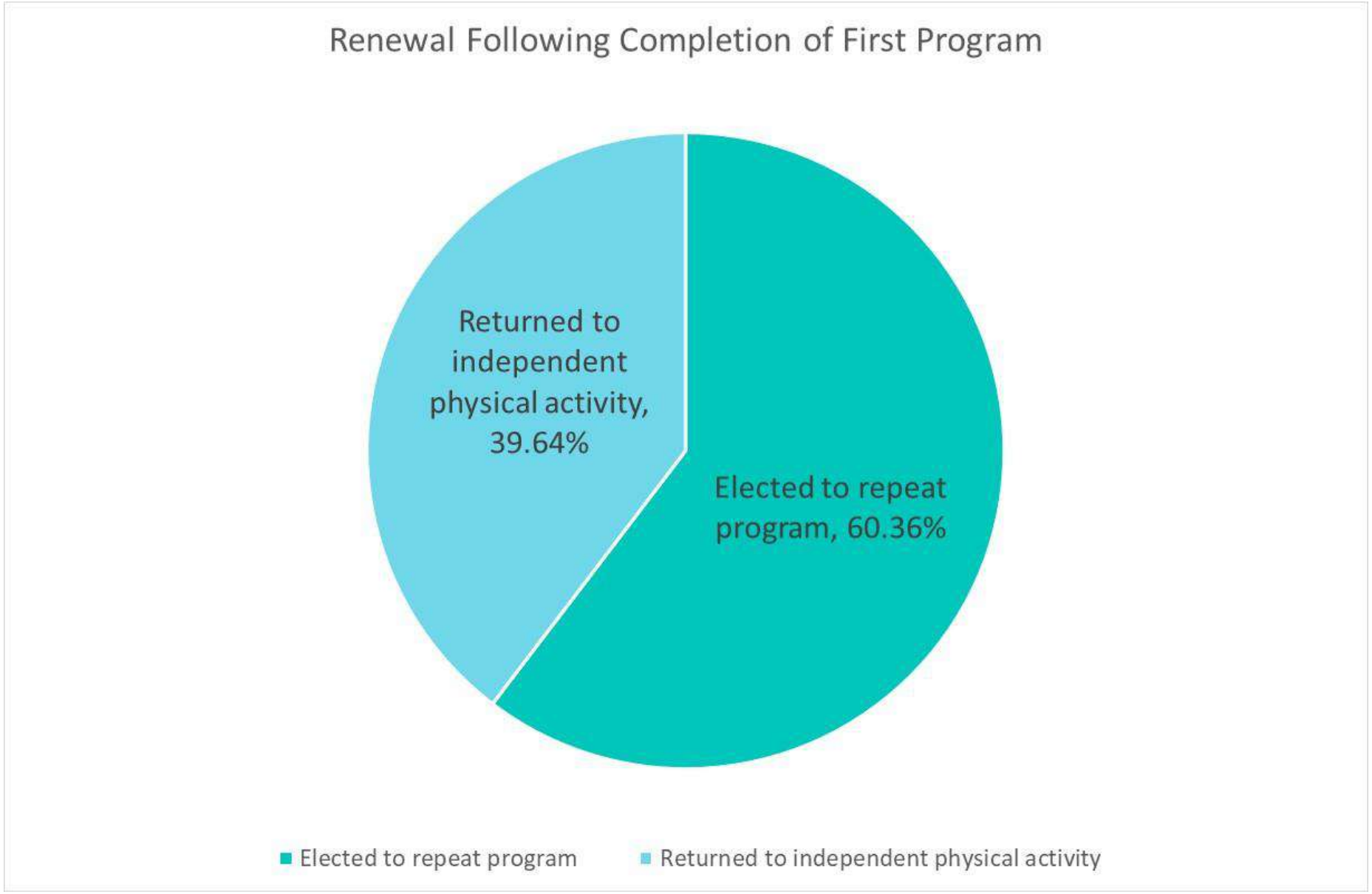
In a clinical setting we know this;
Non-adherence to prevention or treatment can be as high as 70% if regimens are complex and/or require lifestyle changes and modification of existing habits.

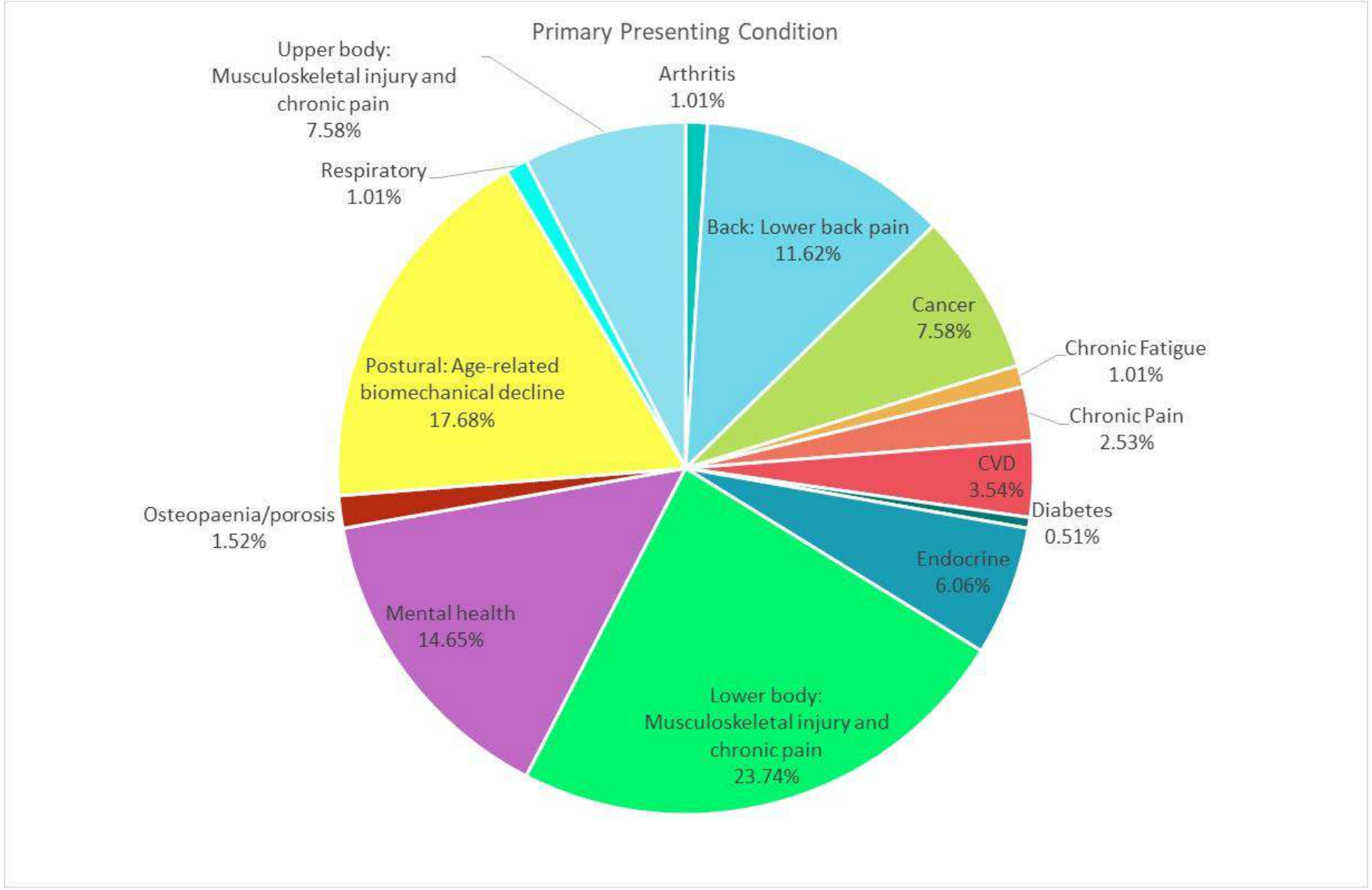
Instructions from clinicians may not be followed through by the patient due to:

- Patients not understanding
- Patients are unwilling
- Physical, emotional, or cognitive barriers.

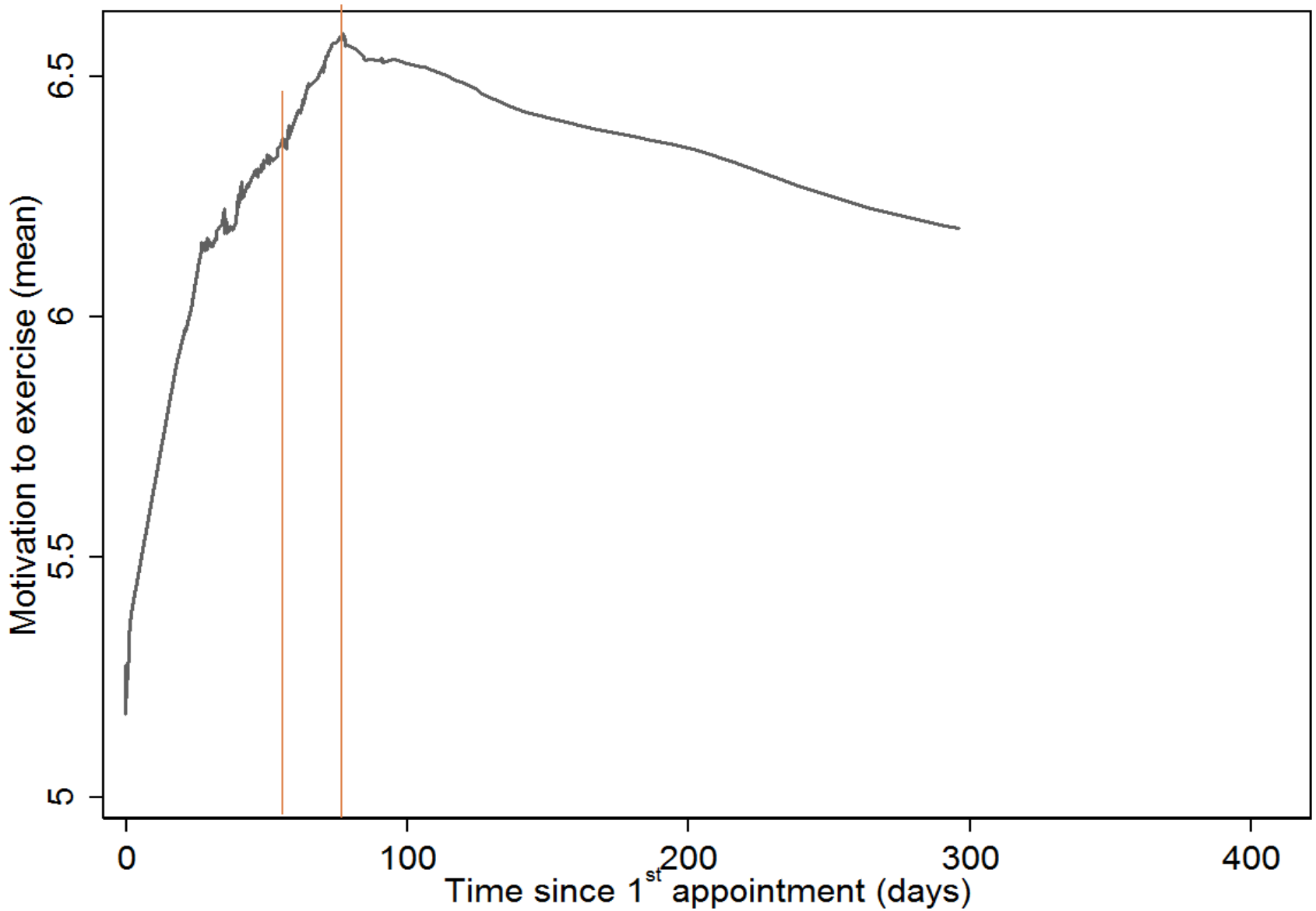
Greater amounts of physical activity are achieved in supervised training compared to unsupervised training. In addition, supervised participants showed greater adherence & consistency compared to unsupervised participants.

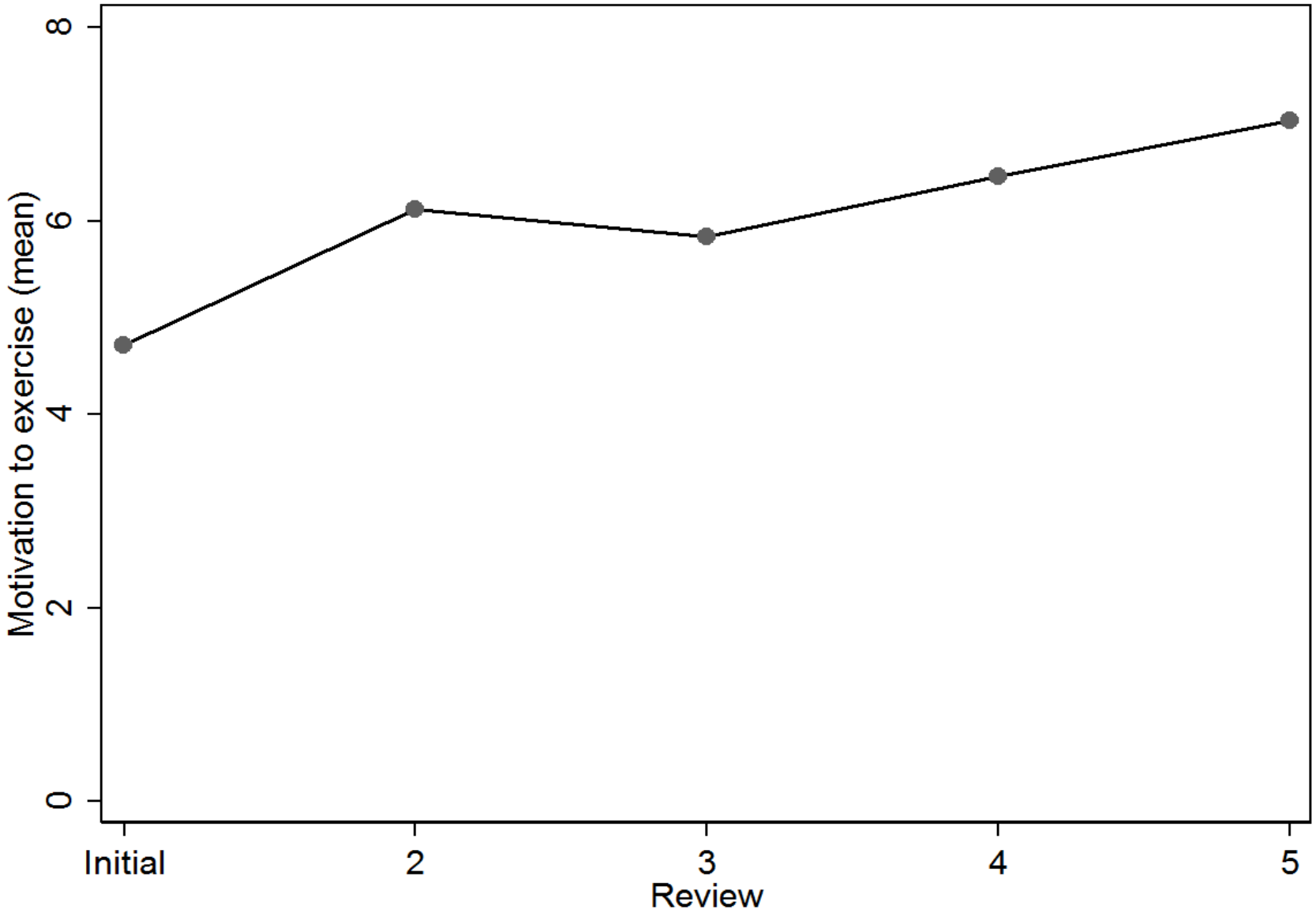
Blackstock et al. (2016); Fennell, Peroutky & Glickman (2016)


Renewal Following Completion of First Program
Returned to independent physical activity, 39.64%
Elected to repeat program, 60.36%
Elected to repeat program
Returned to independent physical activity

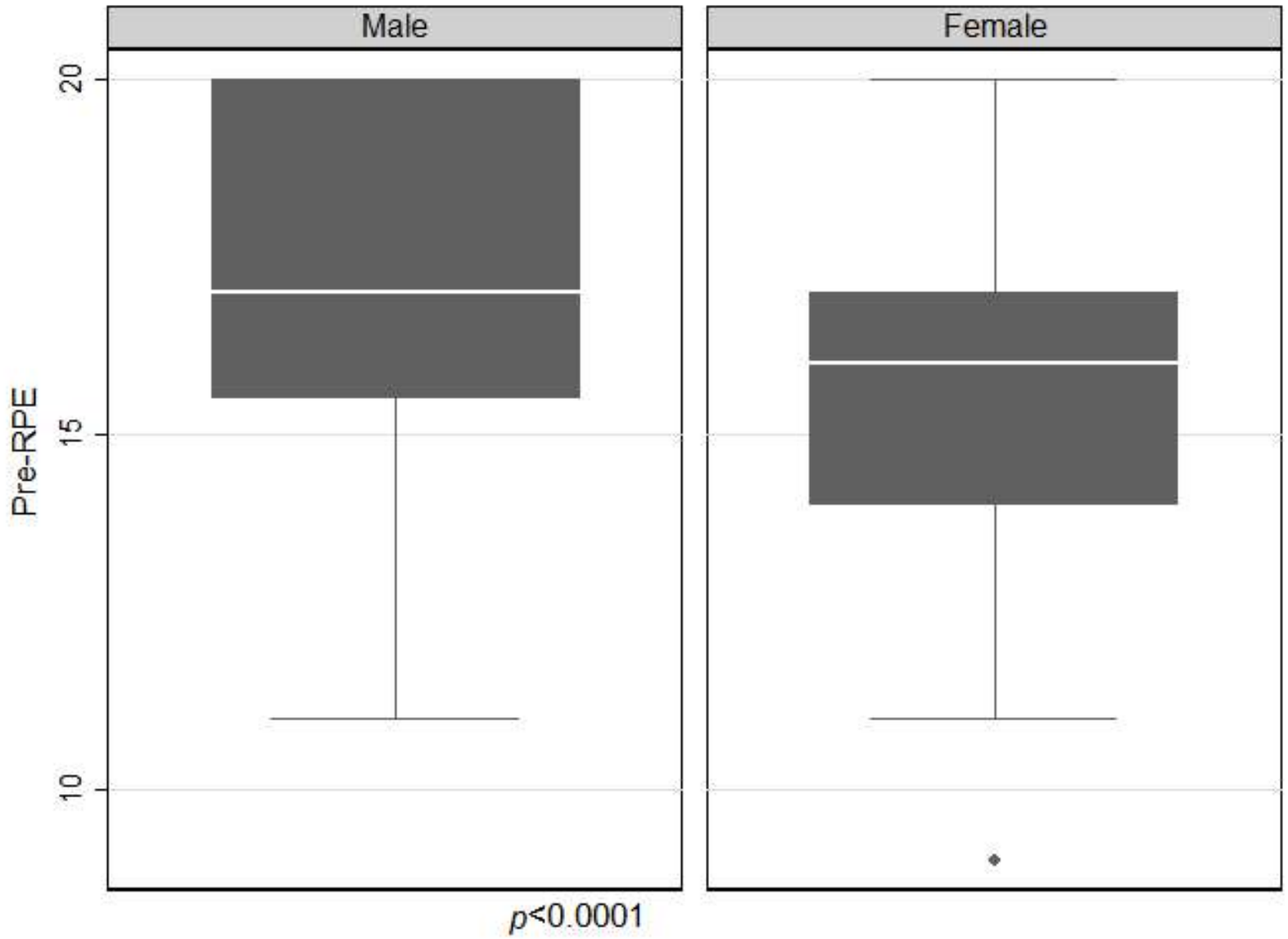

Primary Presenting Condition
Upper body: Musculoskeletal injury and chronic pain 7.58%
Arthritis 1.01%
Respiratory 1.01%
Back: Lower back pain 11.62%
Cancer 7.58%
Chronic Fatigue 1.01%
Chronic Pain 2.53%
CVD 3.54%
Diabetes 0.51%
Endocrine 6.06%
Lower body: Musculoskeletal injury and chronic pain 23.74%
Mental health 14.65%
Osteopaenia/porosis 1.52%
Postural: Age-related biomechanical decline 17.68%

Increased participants motivation to exercise with statistical significance for 300 days




Motivation to exercise (mean)
0
2
4
6
8
Initial
2
3
4
5
Review

Increased the participants perceived and actual capacity for work once engaged in exercise



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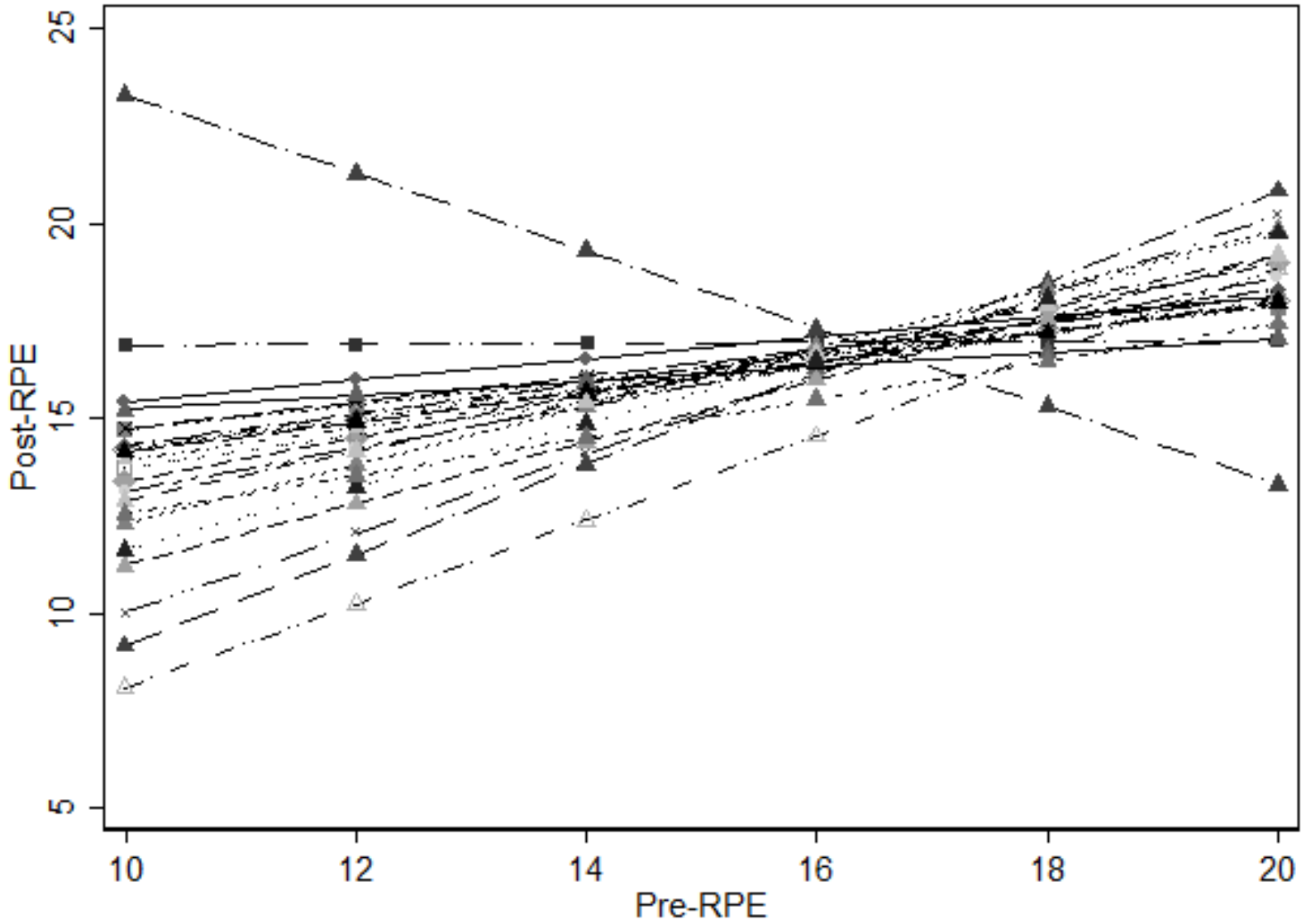
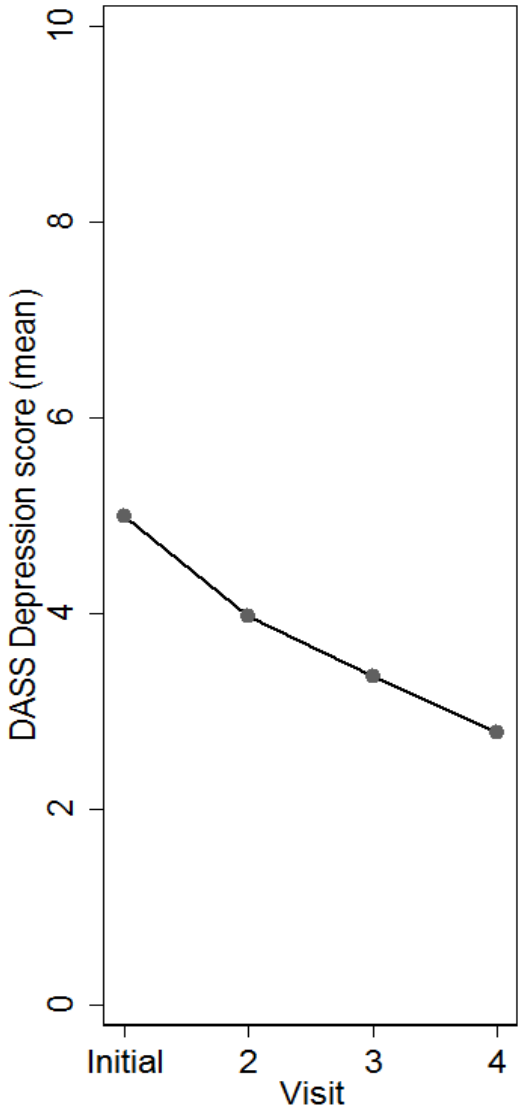
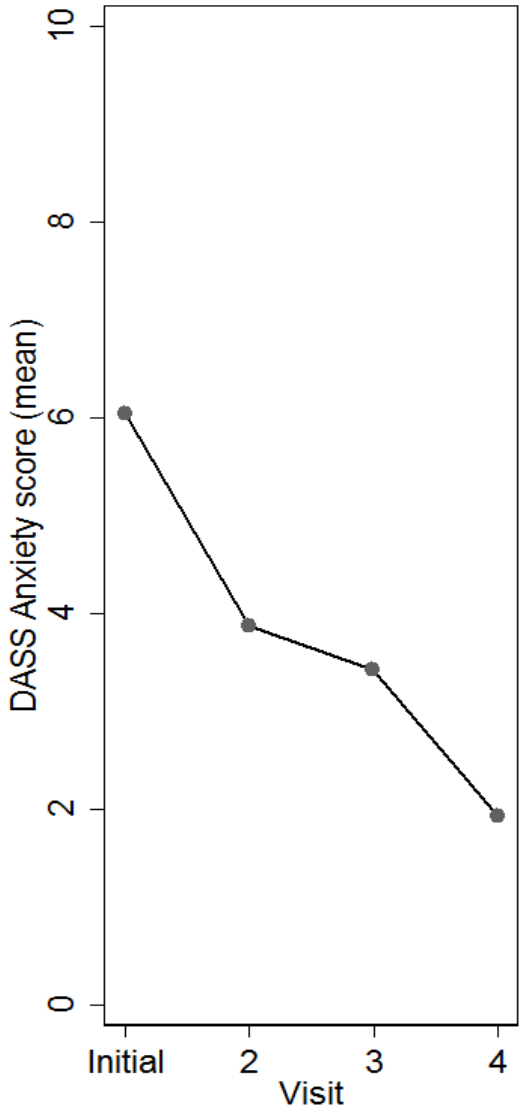
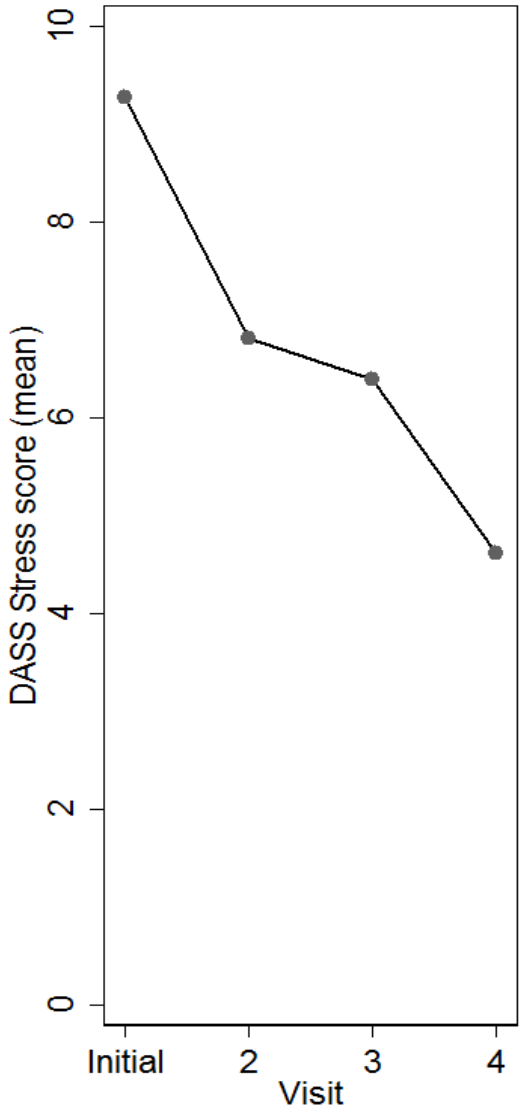


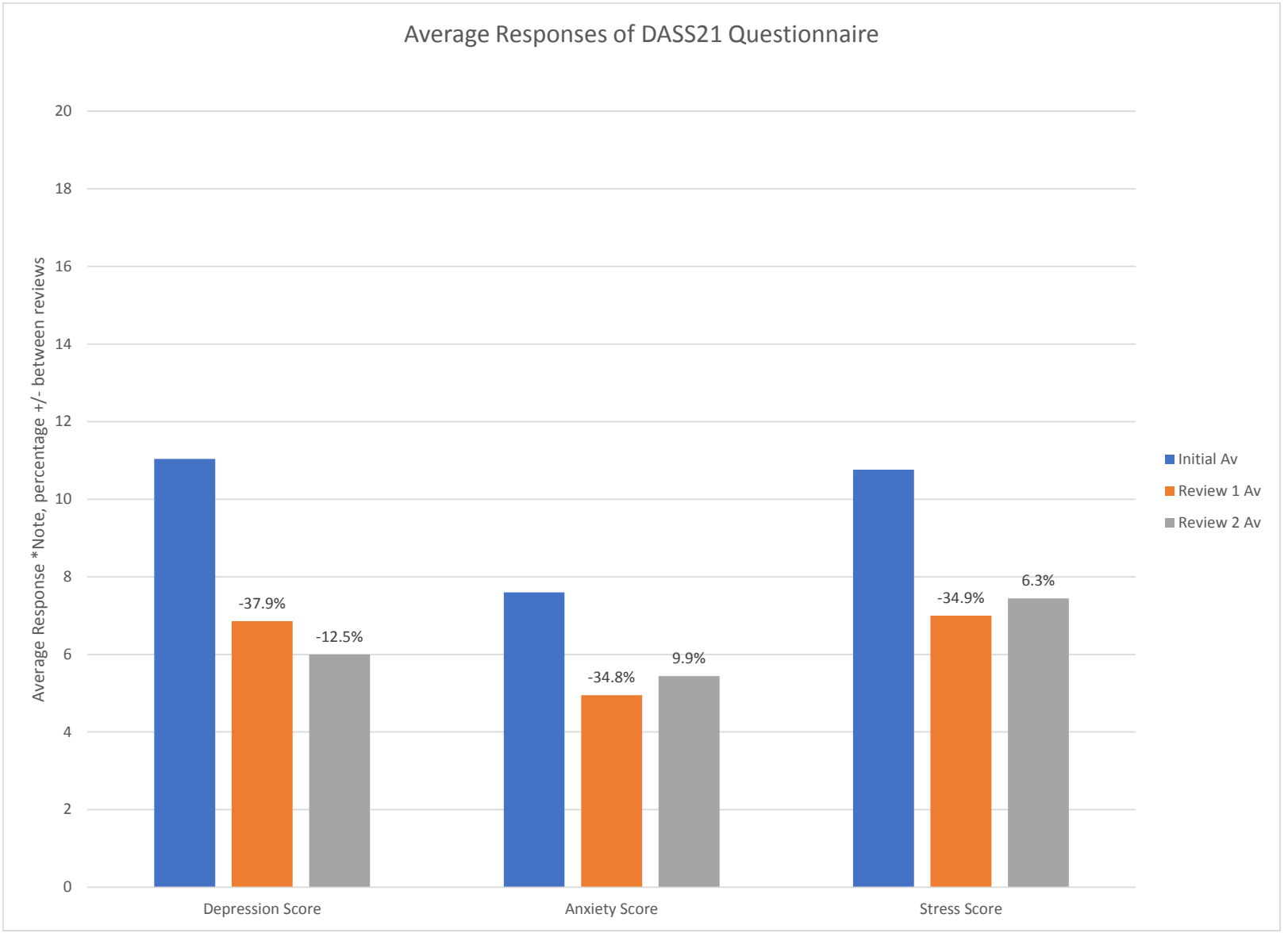
Significantly **decreased non clinically diagnosed mental health participants anxiety and stress**

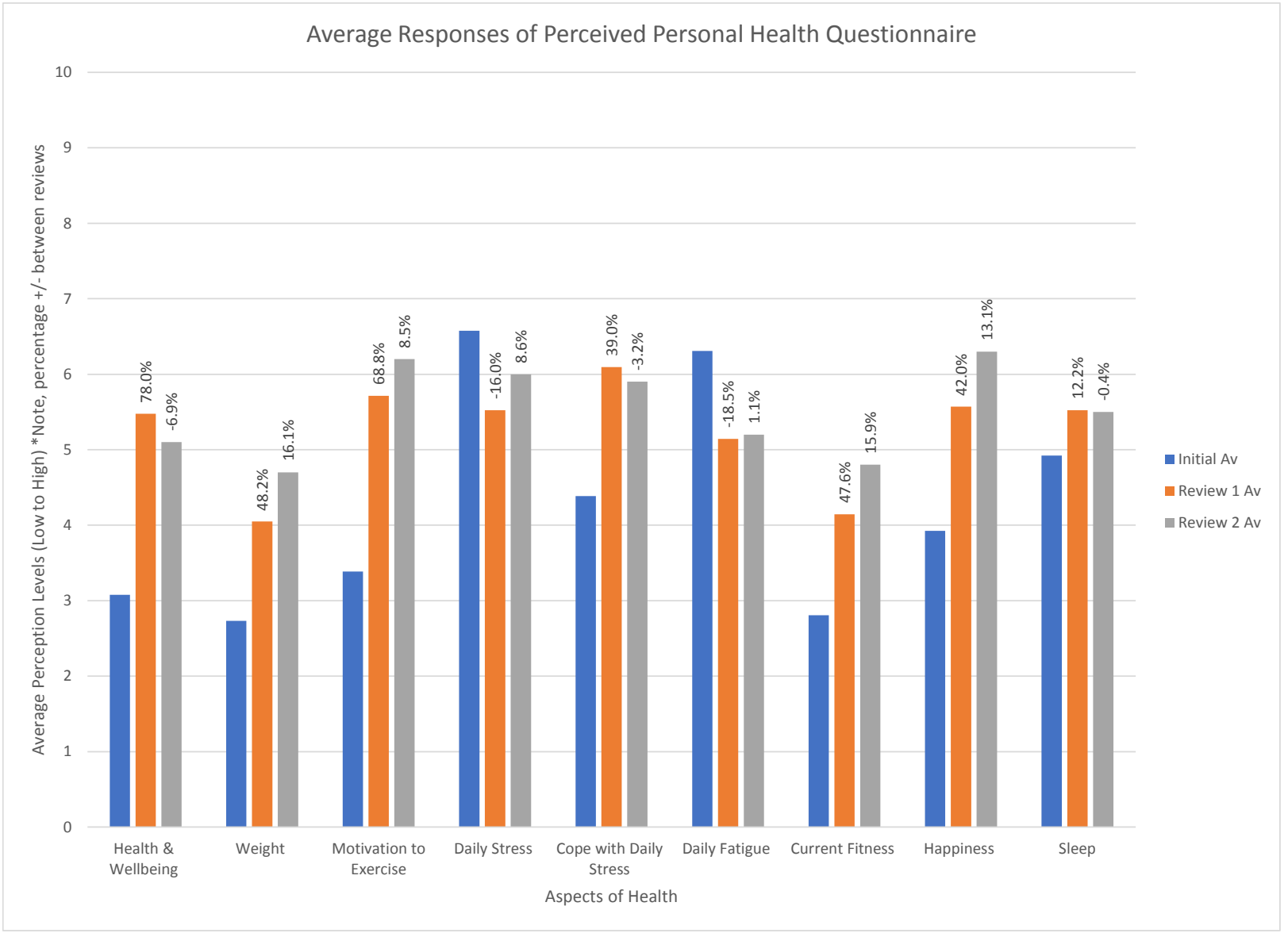




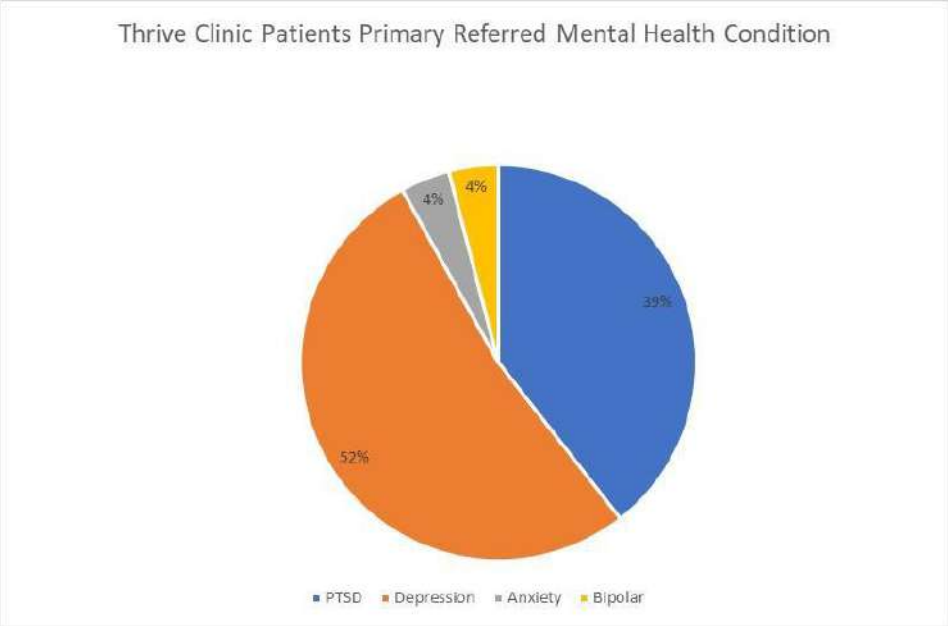


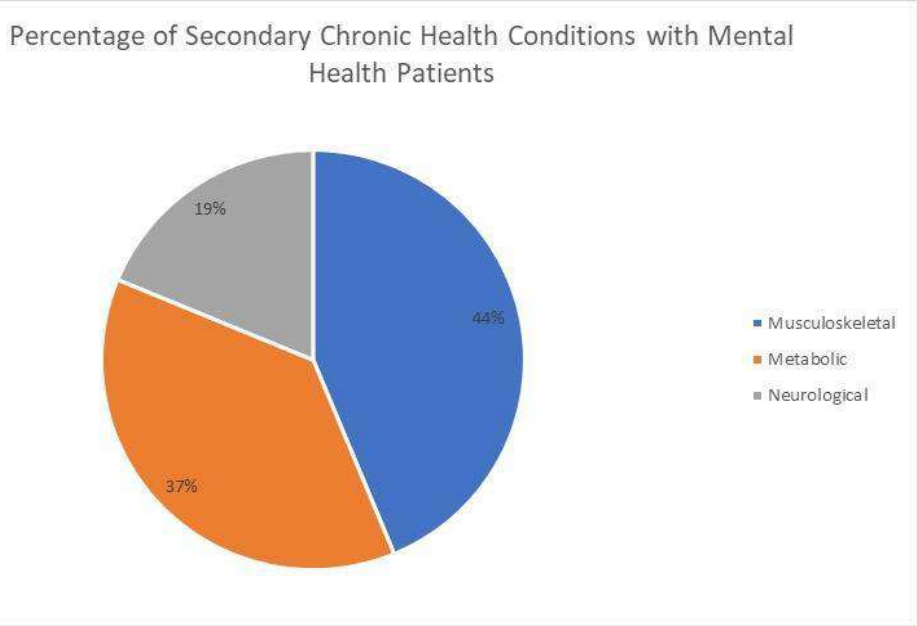
Significantly reduced clinical primary mental health patients depression, anxiety and stress scores




Average Responses of Perceived Personal Health Questionnaire
Average Perception Levels (Low to High) *Note, percentage +/- between reviews
10
9
8
7
6
5
4
3
2
1
0
78.0%
-6.9%
48.2%
16.1%
68.8%
8.5%
-16.0%
8.6%
39.0%
-3.2%
-18.5%
1.1%
47.6%
15.9%
42.0%
13.1%
12.2%
-0.4%
Health & Wellbeing
Weight
Motivation to Exercise
Daily Stress
Cope with Daily Stress
Daily Fatigue
Current Fitness
Happiness
Sleep
Aspects of Health
Initial Av
Review 1 Av
Review 2 Av

The Thrive Clinic
21 Stuart Street
Mosman Park, WA 6012
Ph & Fax: 9385 1430 | Email: admin@theexercisetherapist.com

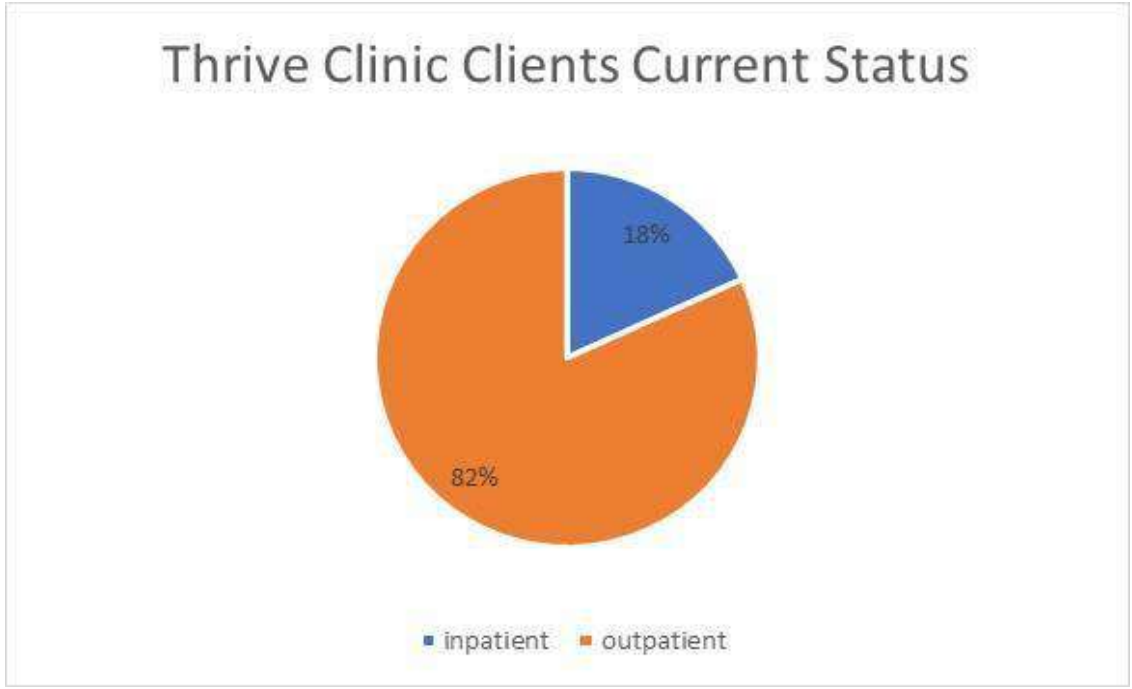




Of the 73.9% of referred mental health clients, a secondary chronic health condition is present.

This data is based on 21 Thrive Clinic clients who have been referred for mental health. The presented statistics are slightly greater than the 59.8% reported in the Australian Mental and Physical Health Tracker.

The Thrive Clinic
21 Stuart Street
Mosman Park, WA 6012
Ph & Fax: 9385 1430 | Email: admin@theexercisetherapist.com



Reducing the social, medical and fiscal burden of chronic conditions in Australia

What did we find?

After two years of observing 198 participants we found that our exercise intervention;

- Generated an **adherence and compliance rate of 85.34%** for the 198 participants.
- I**ncreased participants motivation to exercise with clinical significance for 300 days**
- **Increased the participants perceived and actual capacity for work** once engaged in exercise
- Significantly **Improved participants blood pressure**
- Significantly **Improved participants recovery and heart rate response to exercise**
- Significantly **decreased non clinically diagnosed mental health participants anxiety and stress**
- Significantly **decreased clinically diagnosed mental health participants depression** and **capacity to cope with stress**

We found that **8 and 12 week programs** where an **effective means of generating adherence to exercise**. After participants completed their initial program, 60.36% elected to repeat the program. 39.64% successfully completed and returned to independent activity and exercise after one program.

Reducing the social, medical and fiscal burden of chronic conditions in Australia

What does this mean?

This initial efficacy research proves that with one simple, repeatable and measurable exercise intervention;

1. We have worked out a way to **significantly improve peoples motivation to exercise**
2. We can **significantly improve their adherence to exercise**
3. We can **significantly improve their capacity for work once engaged in exercise**
4. We can effectively treat multiple chronic conditions including mental health with one exercise intervention with specific significance in cancer, CVD, lower back pain and mental health.

*Further validation of arthritis, osteoporosis, COPD, asthma and type two diabetes with greater cohort numbers is required. We are currently planning a follow on impact study to consolidate these findings.

Reducing the social, medical and fiscal burden of chronic conditions in Australia

What more do we need to know?

We need to now test the impact of this intervention in a hospital based setting and in a variety of GP clinic settings with the addition of other allied health services namely physiotherapy, occupational therapy and dietetics. In this impact study we need to look at the impact on specific symptoms as medical biomarkers for chronic illness such as pre diabetes checks, alcohol consumption screening and FEV lung function testing. We need to also look at doing comprehensive DASS screening on all presenting patients to observe and report changes to pre-empt cyclical re-occurrence of mild to severe anxiety, depression and stress.

We need to look at;

1. a larger cohort of participants with arthritis, COPD, osteoporosis, type 2 diabetes and asthma.
2. the specificities of precise pathology and condition related exercise medicine prescription data collection.

We need to **test the ability of the intervention and its surrounding systems**;

- To reduce the number of **chronic illness related hospital presentations** and post 30 day discharge representations.
- To collect data on patients and help reduce symptomology to assist with **chronic illness related GP presentations, and ongoing management.**
- **For combined community based mental and physical health treatment and management and prevention centres that bolster the recent implemented health care homes strategy.**
- In a mental health dedicated psychiatric setting looking at **individual mental health conditions and secondary chronic illnesses** and untie and confirm the specific prescription requirements for various conditions and presentations just as Rob Newton is doing at ECU with Exercise Medicine for Cancer patients.