



GLA:D[®]
AUSTRALIA
HIP & KNEE

2023 ANNUAL REPORT

GLA:D[®]

10 years | 10 countries | 100,000 participants

2013 - 2023

10 YEARS

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Sport and Exercise Medicine
Research Centre

EDITORIAL

About 1 in 5 Australians over the age of 45 have osteoarthritis. The GLA:D® program aims to improve the care of people with knee and hip osteoarthritis through education and exercise therapy, as recommended by international treatment guidelines. GLA:D® was originally launched in Denmark in 2013 and its implementation began in Australia in 2017.

The 2023 Annual Report presents an overview of the GLA:D® Australia program and reports the results from our data registry. The data were obtained from GLA:D® Australia participants for the period of January 2018 to December 2023.

In 2023, the GLA:D® program celebrated its 10th anniversary. Since its development in 2013 by researchers in Denmark, the GLA:D® program has been implemented in 10 countries with more than 100,000 participants registered worldwide.

Big welcome to Paula Pappalardo who joined the team last year!

GLA:D® Australia Team



**Prof
Kay Crossley**



**A/Prof
Christian Barton**



**A/Prof
Joanne Kemp**



**Dr Allison
Ezzat**



**Dr Danilo de
Oliveira Silva**



**Dr Joshua
Heerey**



Karen Dundules



**Dr Marcella
Ferraz Pazzinatto**



**Paula
Pappalardo**

WHAT IS GLA:D®?

All major international guidelines recommend patient education and exercise as the first choice of treatment – combined with weight reduction, if necessary. GLA:D®, Good Life with osteoarthritis from Denmark, is an education and exercise program developed by researchers in Denmark for people with knee or hip osteoarthritis symptoms.

GLA:D® education and exercises provided can be applied to everyday activities, ensuring participants develop skills to self-manage their osteoarthritis. By strengthening and improving confidence with exercise, participants develop better capacity to become or stay active, prevent symptom progression and reduce pain.

GLA:D® aims to accelerate implementation of the national clinical guidelines into clinical practice, and the overall objective is to ensure that:

1. All people with osteoarthritis have equal access to evidence-based treatment irrespective of place of residence or financial situation; and
2. Surgery is considered only when non-surgical treatment measures have not led to satisfactory outcomes

In line with the original Danish program, GLA:D® Australia consists of three core elements:

1) Clinician education, training and support

GLA:D® Australia education and training workshops involve:

- ✓ Pre- and post-workshop knowledge testing
- ✓ Interactive learning sessions related to osteoarthritis management
- ✓ Practical sessions to train patient education and exercise prescription skills
- ✓ Group discussions about overcoming barriers to implementation

2) GLA:D® Australia intervention delivery

All registered participants receive a standardised but individualised program based on need and goals:

- ✓ 2 participant education sessions
- ✓ 12 sessions of supervised group exercise therapy delivered twice weekly for six weeks

3) Data collection of patient outcomes

All program participants are registered into an online participant data registry, with an 'opt out' consent process for contributing to collection of participant-reported data



GLA:D® AUSTRALIA CLINICIANS

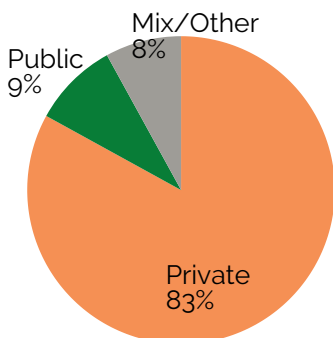
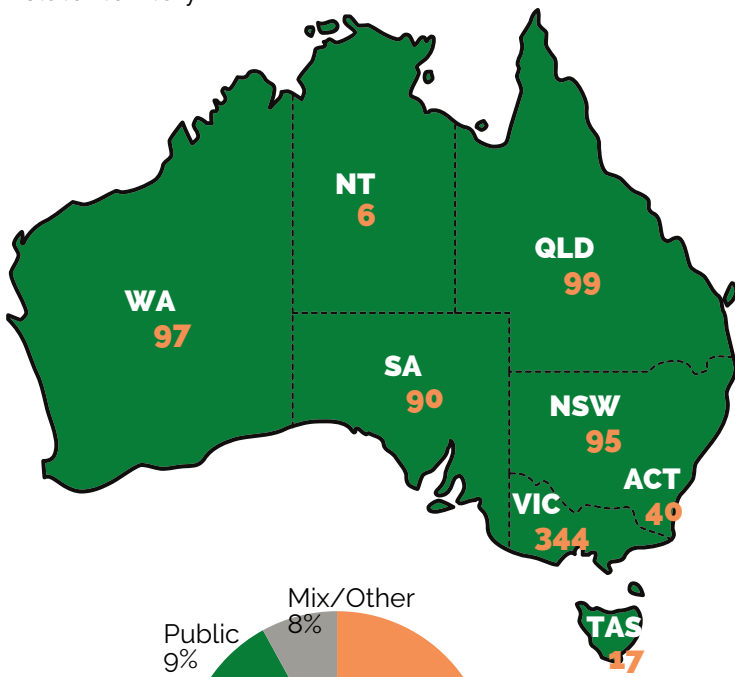
GLA:D® is available in all states of Australia!

The first GLAD® Australia Clinician training course was delivered in March 2017, with **41** courses held around Australia since this time by December 2023.

2984 Physiotherapists and Accredited Exercise Physiologists trained from all states and territories

2486 Clinicians have completed certification so that they can provide the full GLA:D® program in their clinic.

788 sites implemented GLA:D® Australia between March 2017 and December 2023, including private (83%) and public (9%) settings. Their names are listed on the GLA:D® Australia website. The map below indicates the number of sites providing the GLA:D® program in each state/territory:



153 clinics offered the GLA:D® program via telehealth

State	Clinics
ACT	14
NSW	20
NT	1
QLD	13
SA	15
TAS	3
VIC	73
WA	14



WELCOME TO THE ACCREDITED EXERCISE PHYSIOLOGISTS

After two pilot courses in 2022, we opened up our training courses to Accredited Exercise Physiologists.

In 2023, **95** Accredited Exercise Physiologists from all states and territories attended one of our courses.

94 have completed certification.



PROFESSIONAL DEVELOPMENT SESSIONS

In 2023, we provided 3 Professional Development sessions for GLA:D® trained clinicians with current certification



In February, we had **Dr Jean-Francois Esculier**, Leader Research & Development of The Running Clinic, Physiotherapist & Co-Funder of MoveMed Physiotherapy - Canada, Clinical Assistant Professor at University of British Columbia - Canada, presenting **"Is running really bad for your joints?"**

IS RUNNING REALLY BAD FOR YOUR JOINTS?

Jean-Francois Esculier *PT PhD*

Leader Research & Development, The Running Clinic
Physiotherapist & Co-Founder, MoveMed Physiotherapy, Kelowna, Canada
Clinical Assistant Professor, University of British Columbia, Vancouver, Canada

@JFEsculier
 @TheRunningClinic

TheRunningClinic.com



In September, we had **A/Prof Christian Barton**, Department of Physiotherapy, Podiatry and Prosthetics and Orthotics at La Trobe University, Clinical Director and Physiotherapist of Complete. Physio Exercise Performance - Melbourne, Leader of the GLA:D® Australia Hip and Knee, presenting

"Patellofemoral Osteoarthritis"

Patellofemoral OA

A/Prof Christian Barton
La Trobe Sport and Exercise Medicine Research Centre, Melbourne, Australia
Department of Physiotherapy, Podiatry and Prosthetics and Orthotics, School of Allied Health, Human Services and Sport, La Trobe University, Bundoora, Australia
Clinical Director and Physiotherapist, Complete. Physio Exercise Performance, Melbourne, Australia

***All PD sessions were online and the recordings are available to Certified GLA:D® Clinicians**

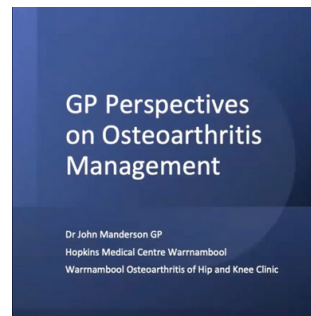
To request the recordings, please get in contact via: glad.australia@latrobe.edu.au

In November, we had a combined session with Dr John Manderson, Dr Allison Ezzat, and the PhD candidate Alison Gibbs



Dr John Manderson,

General Practitioner at Hopkins Medical Centre Warrnambool, and Warrnambool Osteoarthritis of Hip and Knee Clinic, presenting **"GP perspectives on osteoarthritis management"**



Dr Allison Ezzat,

Post-doctoral Research Fellow at La Trobe University and part of the GLA:D® Australia Hip and Knee leadership, presenting **"REFER: REferral to First linE caRe"**



PhD candidate Alison Gibbs,

presenting **"General Practitioner views on osteoarthritis: A qualitative study"**



GLA:D® AUSTRALIA PARTICIPANTS: WHO ARE THEY?

Number of participants

Between January 2018 and December 2022, **18000** participants had taken part in the GLA:D® program from all Australian states and territories.

81% reported their knee as their primary problem joint

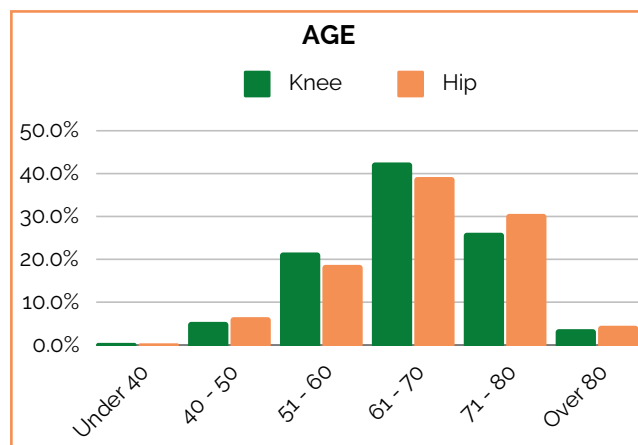
19% reported their hip as their primary problem joint

Characteristics

A total of **71%** of the GLA:D® participants were **women**.

The average age for all participants was **66 years**, with the youngest being a 18 year-old man and the oldest being a 95 year-old woman. Knee participants had an average BMI of 30.3kg/m² and hip participants of 28.5kg/m².

77% of the GLA:D participants were born in Australia. **1%** of all participants are Aboriginal and/or Torres Strait Islander.



Symptoms

 **6 in 7 participants** present **joint stiffness** first thing in the morning.

 **72% of the knee** and **32% of the hip** participants experience **crepitus, clicking or grinding** in their joint.

88% of the knee participants and **91% of the hip participants** present **reduced joint movement**.

Comorbidities

84% of the knee participants and **84%** of the hip participants have **other conditions**. The most common conditions are back pain (39%) and high blood pressure (33%).

Previous surgery

43% of the knee participants and **25%** of the hip participants had undergone previous surgery before they started the GLA:D® program.



GLA:D® AUSTRALIA PARTICIPANTS: 3 MONTHS RESULTS

Reduced Pain

After the GLA:D® program, the average **knee/hip pain intensity decreased** by **29%** (from 45 to 32 mm on VAS (visual analogue scale) 0-100) for knee participants and **25%** (from 44 to 33 on VAS 0-100) for hip participants.

Reduced intake of painkillers

After the GLA:D® program, **46%** of the knee participants and **39%** of the hip participants reported that **they are using less or much less medication**, such as paracetamol, NSAIDs (non-steroidal anti-inflammatory drugs) or opioids.

	KNEE	HIP
Pain	- 29%	- 25%
Medication	- 46%	- 39%
Quality of life	+ 29%	+ 17%
Walking speed	+ 16%	+ 14%

"The GLAD program has worked far better than I had expected. I can now do everything with mild or no pain and is improving weekly. I could not be happier with the program.."

Male, 69 years with symptoms for more than 5 years

Higher quality of life

After the GLA:D® program, average joint-related **quality of life increased** by **29%** for knee participants (KOOS (Knee injury and Osteoarthritis Outcome Score) QoL from 42 to 54) and **17%** for hip participants (HOOS (Hip disability and Osteoarthritis Outcome Score) QoL from 46 to 54).

Improved physical function

For both knee and hip participants, the **number of sit to stands** in 30 seconds **increased by 27%** from 11 repetitions before GLA:D® to 14 repetitions after GLA:D® program.

After the GLA:D® program, the average **walking speed increased** by **16%** (from 1.48 m/sec to 1.72 m/sec) for knee participants and **14%** (from 1.49 m/sec to 1.70 m/sec) for hip participants.



3 in 4 participants attended at least 1 education session and 10 exercise-therapy sessions



87% of the participants were **satisfied or very satisfied** with the GLA:D® Program

90% of the participants use what they have learned in GLA:D® at **least once a week**

GLA:D® AUSTRALIA PARTICIPANTS: 12 MONTHS RESULTS

Reduced Pain

The knee participants experienced an **average pain reduction** of **31%** (from 45 to 31 mm on VAS 0-100) and the hip participants an average pain reduction of **23%** (from 43 to 33 on VAS 0-100) compared with before GLA:D® program.

Reduced intake of painkillers

One year after starting the GLA:D® program, **50%** of the knee participants and **46%** of the hip participants reported that **they are using less or much less medication**, such as paracetamol, NSAID or opioids.

Higher quality of life

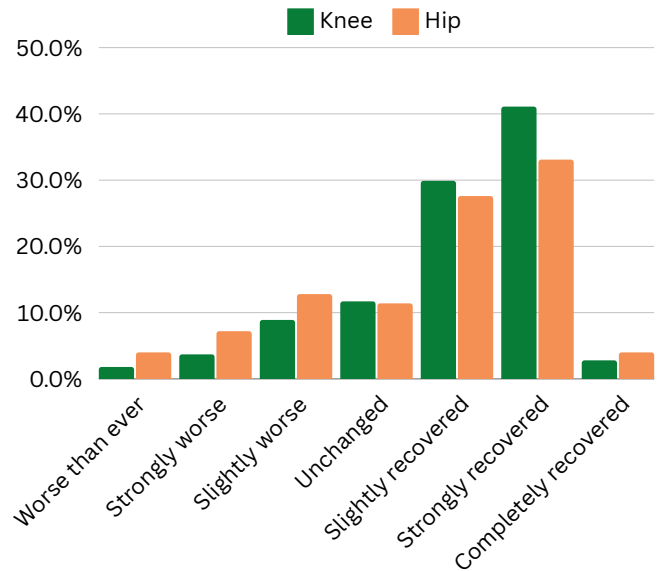
One year after starting the GLA:D® program, participants reported a further **improvement in average joint-related quality of life**. Knee participants reported a **38%** improvement (KOOS QoL from 42 to 58) and hip participants a **24%** improvement (HOOS QoL from 46 to 57) compared with before GLA:D® program.

	KNEE	HIP
Pain	- 31%	- 23%
Medication	- 50%	- 46%
Quality of life	+ 38%	+ 24%
Physical activity participation	+ 13%	+ 10%

"I think the GLAD programme was great! & should be available to all who need it - as a preventative option instead of GPs offering cortisone injections or knee replacements as the only options. I know it certainly helped me at the time."

Female, 75 years with symptoms for more than 4 years

73% of all participants rated themselves as at least slightly recovered one year after starting the GLA:D® program



Physical activity participation

One year after commencing the GLA:D® program, the number of knee participants undertaking **regular physical activity of at least moderate intensity increased 13%** (UCLA physical activity scale from 52% to 65%) and the number of hip participants increased **10%** (UCLA physical activity scale from 52% to 62%).

Joint replacement surgery

5 in 6 knee participants who desired surgery **had not received surgery and no longer desired surgery** one year after starting the GLA:D® program.

3 in 4 hip participants who desired surgery **had not received surgery and no longer desired surgery** one year after starting the GLA:D® program.

FINAL WORDS

Interpretation of results

The analyses included in this Annual Report are entirely descriptive and the results should be interpreted with caution. The data are based on validated questionnaires, objective functional tests and other questions whose validity has not yet been examined. We have strived to achieve the highest degree of validity in data collection in a real world clinical practice setting.

To rule out competing causal factors, the analyses have been done excluding patients who have had joint replacement surgery during the follow-up period. Consequently, the most obvious competing causal factor has been taken into account. The analyses do not involve a control group, and therefore it is possible that factors other than the GLA:D® program may have affected the results.

The majority of GLA:D® participants are people who are able and willing to pay at least some of the cost for the program in a private clinic, and who are able to attend appointments at a physiotherapy service. Consequently, it cannot be ruled out that the composition of the participant population may have affected the results. Overall, the generalisability of the results seems acceptable in relation to knee and hip osteoarthritis participants who are able and motivated to participate in GLA:D® Australia. However, the above limitations must be considered when interpreting the results of this Annual Report.

International collaboration in GLA:D®

GLA:D® has been implemented in 9 countries.

Teams from all countries are a part of the GLA:D® International Network (GIN). The aims of the network are to share experiences and to ensure standardisation and homogeneity in delivering GLA:D® in the different countries.

A common website was established in 2019: www.gladinternational.org

GLA:D® International Network

2013: GLA:D® Denmark

2015: GLA:D® Canada

2017: GLA:D® Australia

2017: GLA:D® China

2019: GLA:D® Switzerland

2019: GLA:D® New Zealand

2020: GLA:D® Austria

2021: GLA:D® Germany

2021: GLA:D® Ireland

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