



THE UNIVERSITY OF  
MELBOURNE

—  
Faculty of Medicine,  
Dentistry and Health Sciences  
Department of Physiotherapy

# CHESM 2021 ANNUAL REPORT

Centre for Health, Exercise and Sports Medicine







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# 2021 CHESM SNAPSHOT

CHESM's education, research and translational activities focus on conservative strategies across the lifespan to improve health & wellbeing.

32

RESEARCHERS  
STUDENTS



100%

Remote due to COVID

## COVID RELATED PROJECT COLLABORATIONS

Allied Health Professions Australia  
Australian Physiotherapy Association  
National Disability Insurance Agency



76

RESEARCH  
PUBLICATIONS

72%

Publications in the TOP QUARTILE  
JOURNAL PERCENTILE



396

AUTHORS



134

INSTITUTIONS



26

COUNTRIES



## HIGHLIGHTS & AWARDS

1 FELLOW OF THE PRESTIGIOUS  
AUSTRALIAN ACADEMY OF  
HEALTH AND MEDICAL SCIENCES



2 UOM DAME KATE CAMPBELL  
FELLOWSHIPS



2 ACADEMIC PROMOTION

1 OUTSTANDING JOURNAL  
REVIEWER AWARD



2

COMPLETED PHD



CHESM KNOWLEDGE  
TRANSLATION  
NETWORK



4,523

CLINICIANS

4,712

CONSUMERS



PHYSIOTHERAPY EXERCISE  
AND PHYSICAL ACTIVITY FOR  
KNEE OSTEOARTHRITIS (PEAK)  
TRAINING

7,000  
REGISTERED



97

COUNTRIES

FUTURELEARN  
REGISTRATIONS  
(PEAK & EDUWEIGHT)

>1,900  
REGISTERED

110  
COUNTRIES

PAINTRAINER

3,352  
REGISTERED

71  
COUNTRIES

MY EXERCISE  
MESSAGES  
IOS APP



# CHESM

The Centre for Health, Exercise and Sports Medicine (CHESM) is a multidisciplinary research Centre established by the Department of Physiotherapy, Melbourne School of Health Sciences, Faculty of Medicine, Dentistry and Health Sciences at the University of Melbourne in 2000.

The Centre's main activities span three areas:

**Research** - including post-doctoral training and research higher degree supervision;

**Engagement and translation** – ensuring research is informed by and impacts key stakeholders;

**Leadership and Service** – within and external to the University.

Our main research focus is on the role of non-drug, non-surgical strategies, particularly exercise in prevention and management of musculoskeletal conditions such as osteoarthritis. To do this, a lifespan approach is taken from childhood through to the elderly years and includes implementation research to address evidence-practice gaps.

CHESM is based within the Department of Physiotherapy in the Alan Gilbert Building on the University Parkville campus. CHESM also has a state-of-the-art Human Movement Laboratory located nearby at 202 Berkeley St. This facility houses equipment including a Vicon motion analysis system, force platforms, electromyography systems and muscle strength dynamometer.





# MESSAGE FROM THE DIRECTOR



Last year, I stated that 2020 was a year that had been commonly defined as “**unprecedented**” as the world was in the grip of the COVID-19 pandemic, but 2021 feels like a year that was “**unparalleled**”. Victorians continued to face further lockdown measures

and at one point Melbourne held the world record for time spent in COVID-19 lockdown. We all played our part in the containment and prevention of community spread of COVID-19 with CHESM team members continuing to work remotely for most of 2021. The CHESM team was proactive in developing contingency plans so that most of our research could continue to proceed despite the unknown. As a result, 2021 was another highly successful year for CHESM. I would like to take this opportunity to thank the CHESM team for their dedication and collegiality this year under the difficult circumstances and congratulate them on their achievements. I would also like to acknowledge the on-going support from the staff of the Department of Physiotherapy, particularly the Head of Department, Prof Jenny McGinley, and the CHESM Advisory Board.

In 2021, CHESM comprised a strong multidisciplinary team of 24 staff and 8 research higher degree students with backgrounds in physiotherapy, medicine, exercise science, podiatry, and biomechanics. We welcomed several new staff members back to CHESM including research fellow Rachel Nelligan and biostatistician Fiona McManus, both of whom previously worked for CHESM as research assistants. We farewelled post-doctoral research fellow, Dr Wen Wu and research assistant, Dave Mackenzie, as well as our biostatistician, Samuel Crofts who is undertaking a PhD. Many of our staff achieved personal recognition. Congratulations to Prof Rana Hinman for her election as a Fellow of the prestigious Australian Academy of Health and Medical Sciences and to Dr Fiona Dobson and Dr Stephanie Filbay who were promoted to Associate Professor and Senior Research Fellow, respectively.

Research higher degree supervisors were particularly busy this year with 7 PhD students and one student undertaking a Masters (MPhil). Three students completed confirmation seminars, Patrick Rowe (MPhil), Luke Davies (PhD), and Travis Haber (PhD). We congratulate 2 students on completing their PhDs, Rachel Nelligan “Digitally-delivered exercise for people with knee osteoarthritis” and Joshua Farragher “Muscle strengthening and neuromuscular control retraining for the treatment of chronic low back pain”.

CHESM celebrates another year of grant success. Prof Rana Hinman, Dr Michelle Hall, Dr Belinda Lawford, myself and colleagues were successful in gaining a Medical Research Future Fund grant where we were awarded \$1.12m for a 5-year project “HipHealth: an exercise and weight loss telehealth program to improve outcomes for Australians living with hip osteoarthritis”. A/Prof Adam Bryant and his team were successful in obtaining a MDHS NHMRC Large Equipment Grant which will allow us to update the camera systems in our human movement laboratory, vital for many studies and PhD projects.

Despite the pandemic, CHESM’s research productivity was exceptional with findings disseminated via 76 contributions to peer reviewed journal articles as well as 24 invited presentations, mostly delivered remotely. Our publications included the results of six of our randomised controlled trials in high impact journals; two in the Annals of Internal Medicine, one in the Journal of the American Medical Association, and one in the Journal of the American Medical Association Internal Medicine. New research opportunities that were presented last year investigating clinician and patient experiences with telehealth during the pandemic working with the Melbourne Disability Institute and stakeholders including the Australian Physiotherapy Association, National Disability Insurance Agency and Allied Health Professions Australia, were published and released in reports this year.

CHESM is committed to ensuring that its research is impactful. In 2021, we contributed to the implementation of telehealth and weight management through our “PEAK” and “EduWeight: Weight management for adult patients with chronic disease” online training programs on the FutureLearn platform which has generated interest by 1,900 clinicians in 110 countries. On the digital front, we released [www.mykneeexercise.org.au](http://www.mykneeexercise.org.au), continue to maintain our pain coping skills website, [www.painTRAINER.org](http://www.painTRAINER.org), and have released CHESM’s first app, My Exercise Messages. The CHESM Knowledge Translation Network that provides an avenue for research dissemination has grown to over 4,500 clinicians and 4,700 consumers from around the world. We also ramped up our social media presence.

As we progress into 2022, the world is slowly emerging from the COVID-19 pandemic and Australia is returning to a “new normal”. We continue to embrace new ways of living and working. Our team is slowly returning to campus, but we are aware of the threat that new variants carry and have contingency plans enabling quick and flexible responses. We look forward to 2022 where CHESM will continue to be innovative and progressive amongst the “new normal”.

A handwritten signature in black ink, appearing to read 'Kim Bennell'.

**Kim Bennell, PhD**  
Director, CHESM

# OUR TEAM



## CHESM DIRECTOR

- Prof Kim Bennell

## STAFF

- Dr Kim Allison
- A/Prof Adam Bryant
- Penny Campbell
- A/Prof Fiona Dobson
- Dr Thorlene Egerton
- Dr Stephanie Filbay
- Bridget Graham
- Dr Michelle Hall
- Prof Rana Hinman
- Dr Sarah Jones
- Alex Kimp
- Gabby Knox
- Dave Mackenzie (until November)
- Dr Belinda Lawford
- Ben Metcalf
- Dr Mark Merolli
- Dr Kade Paterson
- Dr Pek Ling Teo
- Dr Tim Sayer
- Libby Spiers
- Dr Wen Wu (until December)
- Dr Rachel Nelligan (commenced October)

## BIostatistician

- Sam Crofts (until February)
- Fiona McManus (commenced February)

## PHD STUDENTS

- Pei Wei Chi
- Josh Farragher (completed November)
- My-Linh Nguyen
- Rachel Nelligan (completed December)
- Scott Starkey
- Travis Haber
- Luke Davies

## MPHIL STUDENTS

- Patrick Rowe

# ADVISORY BOARD

The CHESM Advisory Board was originally established in 2001 under University auspices. Its role is to provide advice and recommendations on research activities and future direction.

As the Centre is evolving in terms of its multi-disciplinary research focus, it was time to revisit the Terms of Reference, and refresh our Advisory Board. In June 2014, a new Board, with stronger consumer representation and key discipline areas relevant to our research focus, was established. Membership terms are three years. This year, the board membership includes new stakeholder, clinician, and consumer representatives.

## CHESM ADVISORY BOARD MEMBERSHIP IN 2021:

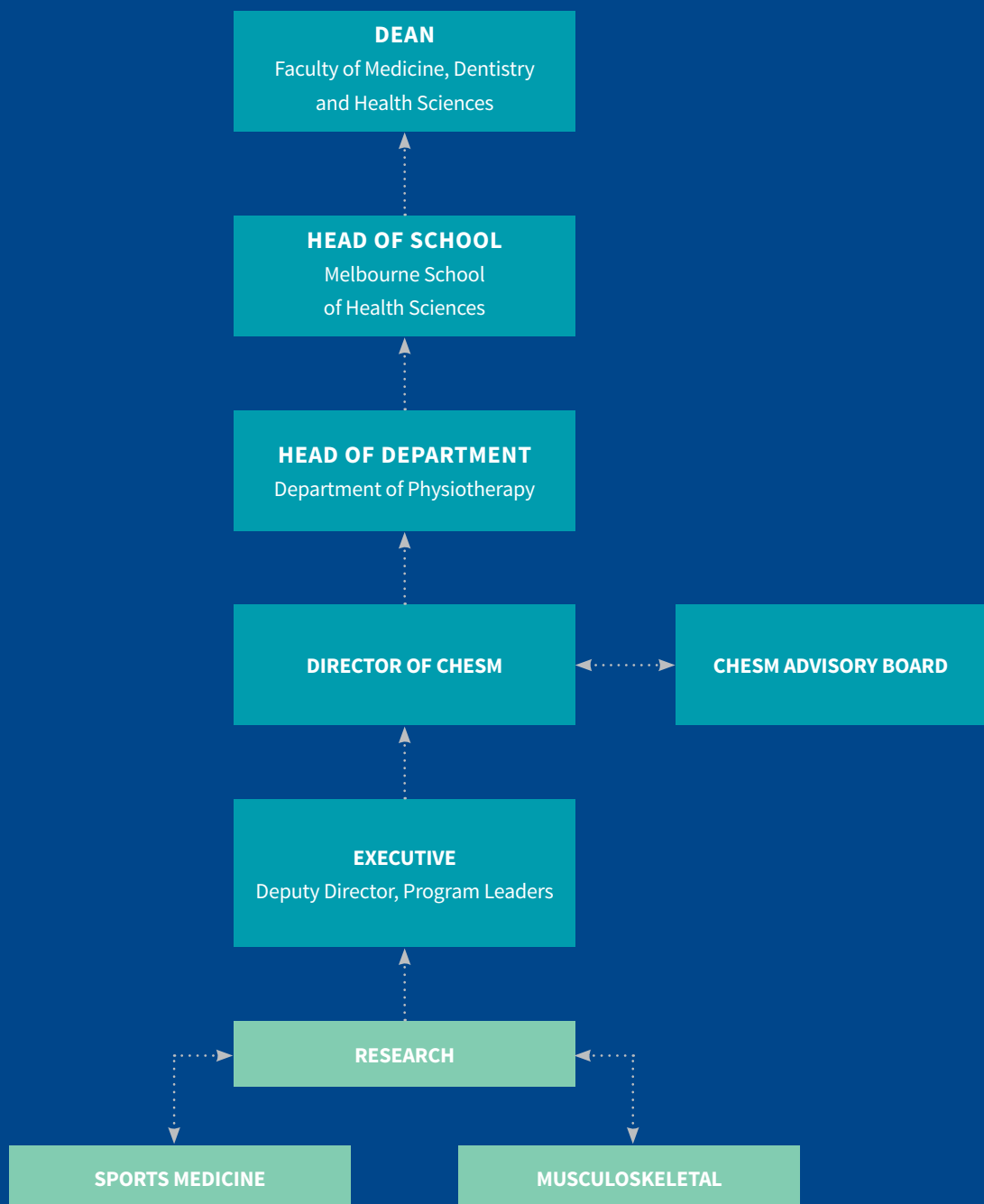
COMPOSITION	POSITION	MEMBER
Department of Physiotherapy	Head of Department	Prof Jennifer McGinley
CHESM	Director	Prof Kim Bennell
Representative of Faculty external to the Department of Physiotherapy	Acting Deputy Vice-Chancellor (Research)	Prof Mark Hargreaves
Clinician representative(s) of discipline area(s) relevant to CHESM activities and external to the University	Specialist Musculoskeletal Physiotherapist, Director of Waverley Park Physiotherapy Centre and Co-Director of Physioworks Health Group Camberwell	Mr Andrew Dalwood
Clinician representative(s) of discipline area(s) relevant to CHESM activities and external to the University	Clinical Research Coordinator, St Vincent's Hospital, Sports Physiotherapist	Dr Sophie Heywood
Stakeholder representative(s) relevant to CHESM activities	Head of Health Strategy and Services, Medibank	Dr Catherine Keating
Stakeholder representative(s) relevant to CHESM activities	Policy Advisor, Australian Physiotherapy Association	Mr Dan Miles
Consumer Representative	Chronic musculoskeletal conditions	Mr Neil Bidgood



# GOVERNANCE STRUCTURE

The current governance structure of CHESM is shown below. The location of CHESM within the Department of Physiotherapy, School of Health Sciences, affords it the same support and governance procedures of the Department and School.

The Centre's leadership, research and financial management, and long-term strategic planning are the responsibility of the Director, Prof Kim Bennell. Her role is supported by Deputy Director, Prof Rana Hinman and A/Prof Adam Bryant, Sports Medicine Program Leader. Administrative support is also provided.



# KEY RESEARCH PROJECTS

The primary focus of research at CHESM is on the role of conservative strategies, particularly exercise, in promoting overall health and wellbeing, and in preventing and managing musculoskeletal conditions in particular osteoarthritis.

In 2021, CHESM conducted the following key research projects:



## ARTHROSCOPIC SURGERY FOR HIP IMPINGEMENT VERSUS BEST CONSERVATIVE CARE: FASHION STUDY

The primary focus of research at CHESM is on the role of conservative strategies, particularly exercise, in promoting overall health and wellbeing, and in preventing and managing musculoskeletal conditions in particular osteoarthritis.

Status of project: PUBLISHED 2021  
*BMC Musculoskeletal Disord*



## MY KNEE EXERCISE

The primary aim of this study was to develop and compare a combined intervention that includes a website, 'My Knee Exercise', containing educational information, guidance to increase physical activity, and the prescription of a 24-week self-directed home-based lower-limb strengthening program in addition to a 24-week behaviour change SMS exercise adherence program to 'My Knee Education', an education control website containing osteoarthritis and exercise information only over 24 weeks for people with knee osteoarthritis.

Status of project: PUBLISHED 2021  
*JAMA Internal Medicine*



Online Support Group  
Pilot Study

## ONLINE SUPPORT GROUP PILOT AND FEASIBILITY RANDOMISED CONTROLLED TRIAL

This primary aim of this study was to investigate the feasibility, acceptability and effectiveness of an expert-moderated peer-to-peer online support group versus an information website alone for people with knee osteoarthritis.

Status of project: PUBLISHED 2021  
*JMIR Formative Res*



## FOOTWEAR FOR SELF-MANAGING KNEE OSTEOARTHRITIS SYMPTOMS: FOOTSTEP TRIAL

The primary aim of this research study was to investigate the effects of two classes of readily available off-the-shelf shoes on knee osteoarthritis symptoms. It is recommended that clinicians provide advice on "appropriate" footwear for people with knee osteoarthritis. However, there is little evidence from clinical trials to determine which shoes are best for self-managing knee osteoarthritis.

Status of project: PUBLISHED 2021  
*Annals of Internal Medicine*



## PLATELET-RICH PLASMA AS A SYMPTOM- AND DISEASE-MODIFYING TREATMENT FOR KNEE OSTEOARTHRITIS - RESTORE TRIAL

The primary aim of this study was to investigate whether a series of three platelet-rich plasma (PRP) injections into the knee joint was effective in reducing pain and slowing loss of cartilage in the knee joint by comparing outcomes over 12 months. Safe and effective treatments that reduce symptoms of knee osteoarthritis and slow structural disease progression are needed. PRP, an autologous blood product that contains an elevated concentration of platelets, has biologic potential.

Status of project: PUBLISHED 2021  
*JAMA*



### BETTER KNEE BETTER ME™ STUDY

The primary aim of this study was to compare the clinical and cost effectiveness of a remotely-delivered intervention targeting exercise and self-management (Exercise intervention), with the same intervention plus active weight management (Exercise and weight management intervention) using a very low calorie diet, and with an information-only control group for people with knee osteoarthritis and overweight or obesity.

Status of project: PUBLISHED 2021

*Annals of Internal Medicine*



### INFO VIDEO STUDY

The primary aim of this mixed-methods study was to explore the perspectives of people with clinically-diagnosed knee osteoarthritis regarding a short (9 minute) psycho-educational video that explains knee osteoarthritis with novel holistic, biopsychosocial content and a focus on positive messaging and optimistic outlook.

Status of project: PUBLISHED 2021

*BMC Musculoskeletal Disord*

### EXERCISE AND DIET FOR PEOPLE WITH HIP OSTEOARTHRITIS: FEASIBILITY STUDY

The primary aim of this study was to pilot a 6-month intervention that includes a diet and exercise program delivered by a dietitian and physiotherapist in people with hip OA who have overweight or obesity, and qualitatively explore participants' perspective of participation in and the delivery of the intervention.

Status of project: completed

### COMPARATIVE EFFECT OF TWO EDUCATIONAL VIDEOS FOR PEOPLE WITH KNEE OSTEOARTHRITIS (VIDEO)

The primary aim of this study was to determine if an educational video based on an empowerment and participatory discourse improves self-efficacy to manage knee osteoarthritis pain and reduces fear of movement more than an educational video based on a disease information and impairment discourse, among people with knee osteoarthritis symptoms, through a randomised controlled trial.

Status of project: completed

### DEVELOPMENT OF A CORE CAPABILITY FRAMEWORK FOR PHYSIOTHERAPISTS TO DELIVER CARE VIA VIDEOCONFERENCING: A DELPHI SURVEY

The primary aim of this study is to develop a discipline specific core skills-based (capability) framework for physiotherapists involved in the delivery of individual - and group-based patient care via videoconferencing using an international consensus process. The framework is intended to be applicable internationally for physiotherapy clinicians working in a range of settings.

Status of project: PUBLISHED 2021

*J Physiother*

### A TRAINING PROGRAM FOR PHYSIOTHERAPISTS ABOUT WEIGHT MANAGEMENT FOR PEOPLE WITH OSTEOARTHRITIS. A RANDOMISED CONTROLLED TRIAL

The aim of this project was to evaluate the effectiveness of an online training program to upskill physiotherapists in weight management for people with osteoarthritis who have overweight or obesity. This study assessed physiotherapist's confidence in their knowledge about, and their clinical skills in implementation of, weight management interventions before and after the online training compared to a control group.

Status of project: PUBLISHED 2021

*Arthritis Care Res*

### FOOT ORTHOSES FOR BIG TOE JOINT OSTEOARTHRITIS – RANDOMISED CONTROLLED TRIAL

The primary aim of this study was to investigate the effect of insoles for pain during walking due to big toe osteoarthritis over a 12-week period. Osteoarthritis is common at the big toe joint resulting in pain and problems with movements such as walking and there is need for effective treatments that reduce pain and improve function.

Status of project: completed



### EXERCISE FOR PEOPLE WITH HIP OSTEOARTHRITIS

The primary aim of this randomised controlled trial is to investigate the effects of two different 9-month exercise programs on pain and physical dysfunction in people with hip osteoarthritis. Participants in both groups will be allocated to a physiotherapist for nine sessions over the first three months and will be asked to perform weekly exercises.

Status of project: completed

## MUSCULOSKELETAL TREATMENT PATHWAYS

This multi-site project led by the University of Sydney aims to compare the treatment pathways provided in primary and specialist care to advance understanding of recovery from musculoskeletal conditions. One group will be treated by their usual doctor or health professional as required, while the other group will be given treatment based on their responses to the questionnaires, with care provided by their primary care provider and/or a specialist provider for people with neck pain/whiplash, non-specific low back pain, or knee osteoarthritis.

Status of project: in progress



## OPTIMISING PRIMARY CARE MANAGEMENT OF KNEE OSTEOARTHRITIS: PARTNER PROJECT

The primary aim of this study was to develop and evaluate a model of care for primary care management of knee osteoarthritis that supported both General Practitioners and patients to uptake the key osteoarthritis clinical guideline recommendations and achieve improvements in pain and function. Optimal management of knee osteoarthritis often requires challenging lifestyle changes for people with knee osteoarthritis, and General Practitioners face challenges in guiding and supporting their patients to make these changes.

Status of project: completed



## MODIFIED YOGA EXERCISE PROGRAM FOR PEOPLE WITH KNEE OSTEOARTHRITIS

The primary aim of this study is to investigate different types of online resources for people with knee osteoarthritis (OA) to help them manage their symptoms. Participants will be asked to utilise an OA resource website for 12 weeks including completing a modified-yoga exercise in their own home using videos accessed on the internet or education only.

Status of project: in progress

## PHYSIOTHERAPISTS MANAGEMENT OF HIP PAIN

The primary aim of this study is to investigate how physiotherapists manage middle aged or older patients with chronic hip pain in Australian and New Zealand private. This study will assist future research that aims to improve the health outcomes for people with chronic hip pain.

Status of project: in progress

## HEALTH PROFESSIONALS AND PATIENT EXPERIENCES OF MANAGEMENT FOR ACL INJURY: INFORMING THE PATIENT DECISION AID

This study explores patients' and clinicians' experiences managing people with ACL injury to understand current practices in Australia, explore beliefs and expectations surrounding ACL management options, barriers and facilitators for making an informed treatment decision, and the perceived positive and negative features of ACL management options. Findings will inform the development of a patient decision aid for the management of ACL injury.

Status of project: in progress

## FOOTWEAR FOR SELF-MANAGING HIP OSTEOARTHRITIS SYMPTOMS: SCHIPP TRIAL

The primary aim of this research study was to investigate the effects of two classes of readily available off-the-shelf shoes on hip osteoarthritis symptoms. It is recommended that clinicians provide advice on "appropriate" footwear for people with hip osteoarthritis. However, there is little evidence from clinical trials to determine which shoes are best for self-managing hip osteoarthritis.

Status of project: in progress

## UNDERSTANDING HEALTH SERVICE USAGE AND MANAGEMENT PRACTICES FOR ANKLE SPRAINS AND CHRONIC ANKLE INSTABILITY IN NETBALL ATHLETES

This study examines the prevention and management practices for ankle sprains undertaken by netball athletes. We aim to better understand what prevention measures are implemented and whether netball athletes seek medical advice and treatment from health professional(s) following an ankle sprain.

Status of project: in progress



### **PHYSIOTHERAPY EXERCISE AND PHYSICAL ACTIVITY FOR KNEE OSTEOARTHRITIS: PEAK STUDY**

This study compares the clinical effectiveness and cost-effectiveness of video consultations with physiotherapists to traditional face-to-face consultations for management of people with knee osteoarthritis and explore the experiences of users and providers of care. This study will help determine whether video consultations are non-inferior to face-to-face consultations for improving knee pain on walking and physical function.

Status of project: in progress

### **ATHLETIC FOOTWEAR FOR REDUCING KNEE LOADS IN GIRLS AND WOMEN**

This study will develop a novel athletic shoe that can reduce harmful knee loads during sport in adolescent girls & young women. Our findings will lead to the development of a new ASICS shoe (phase 1) that will be “field-tested” (phase 2) during sporting activity with high ACL injury risk (netball) to evaluate its effect on tibial shock (in-field surrogate measure of knee load) & player comfort compared to a conventional shoe.

Status of project: in progress

### **RELIABILITY OF QUANTITATIVE SENSORY TESTING AND INDICATORS OF INFLAMMATION IN PEOPLE WITH HIP OSTEOARTHRITIS**

This study investigates the reliability of pain sensitivity and stability of levels of inflammation measured in the blood. Little is known about how stable these measures are in people whose hip pain is consistent with hip osteoarthritis, making it very difficult to interpret any changes seen in these measures over time.

Status of project: in progress

### **HIPHEALTH – “BETTER HIP” TRIAL**

The primary aim of this study is to evaluate the effectiveness of a telehealth-delivered clinician-supported program (Better Hip) which will comprise education, strengthening exercise, physical activity, self-management strategies and if needed, dietary intervention for weight loss, for people with hip osteoarthritis. We will evaluate the effectiveness of the Better Hip program on pain and physical function, and also conduct a cost-effectiveness analysis of the program.

Status of project: in progress

### **HEALING OF ACUTE ACL INJURY WITHOUT SURGERY**

The primary aim of this study is to evaluate the outcomes and ACL healing in patients with ACL rupture who were managed with the cross bracing protocol.

Status of project: in progress

### **TELEHEALTH ASSESSMENT STUDY**

The primary aim of this study will investigate the accuracy of performance-based tests when conducted via video by a physiotherapist, compared to when the same tests are conducted in-person. This study looks to validate the use of performance-based tests in the context of videoconferencing as these measures have not been validated in this context.

Status of project: in progress

### **MOBILE APP FOR KNEE OSTEOARTHRITIS (MAPPKO)**

The primary aim of this study is to compare the effects physiotherapy versus physiotherapy and a mobile app on knee osteoarthritis symptoms. The mobile app was developed to help remind participants to exercise in the form of notifications that was originally created from a behaviour change informed SMS program that CHESM previously utilised as part of the ADHERE trial.

Status of project: in progress

### **EXERCISE AND WEIGHT LOSS FOR KNEE PAIN (POWER)**

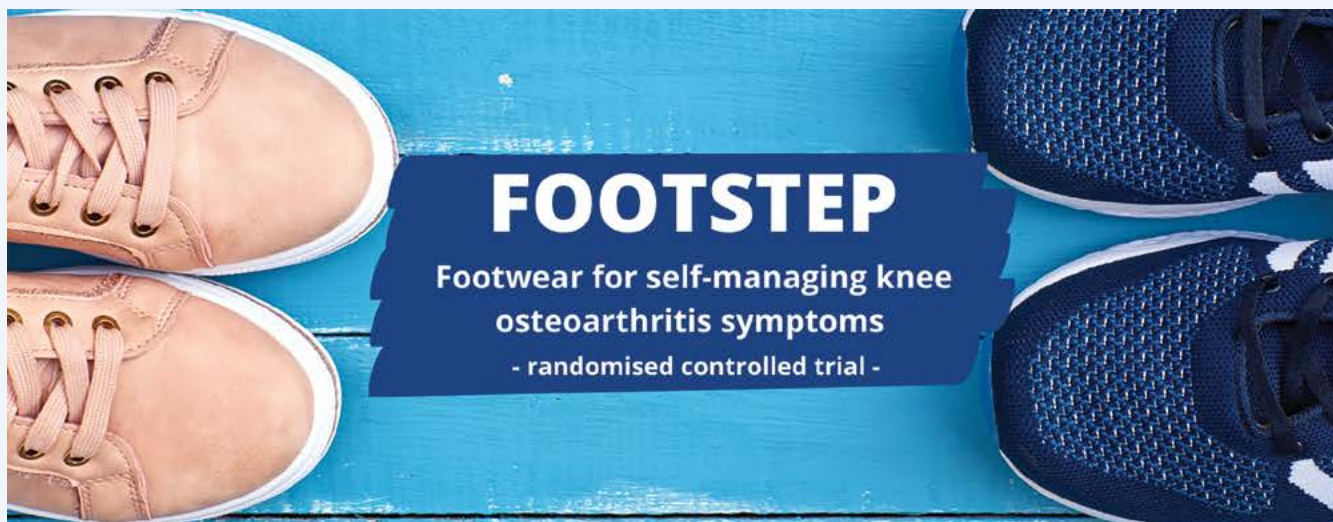
The primary aim of this study is to test the efficacy of a physiotherapist-supervised very low calorie ketogenic diet combined with an exercise program, for people with knee osteoarthritis compared to an exercise program only.

Status of project: in progress

### **THE EPIPHA-KNEE TRIAL: EXPLAINING PAIN TO TARGET UNHELPFUL PAIN BELIEFS TO INCREASE PHYSICAL ACTIVITY IN KNEE OSTEOARTHRITIS**

Led by A/Prof Tasha Stanton at the University of South Australia, the primary aim of this study is to evaluate the clinical- and cost-effectiveness of integrating physiotherapist-delivered pain science education, an evidence-based conceptual change intervention targeting unhelpful pain beliefs by increasing pain knowledge, with an individualised walking, strengthening, and general education program.

Status of project: in progress



# FOOTSTEP

Footwear for self-managing knee osteoarthritis symptoms

- randomised controlled trial -



164 participants



Moderate to severe  
medial tibiofemoral  
knee osteoarthritis



6 hrs per day for  
6 months

## FLAT FLEXIBLE SHOES

- ✓ Heel height/thickness <15mm
- ✓ Shoe pitch <10mm
- ✓ Arch support/motion control - absent
- ✓ Sole flexibility - "Minimal" rigidity
- ✓ Weight ≤200 grams

VS

## STABLE SUPPORTIVE SHOES

- ✓ Heel height/thickness >30mm
- ✓ Shoe pitch >10mm
- ✓ Arch support/motion control - present
- ✓ Sole flexibility - "Rigid"
- ✓ Weight >300 grams

## MAIN RESULTS

No evidence was found that flat flexible shoes were superior to stable supportive shoes on walking knee pain or physical function.

Improvements in walking knee pain, knee-related quality of life and ipsilateral hip pain favoured stable supportive shoes.

Fewer participants reported adverse events with stable supportive shoes.

## KEY MESSAGES

Flat flexible shoes were not superior to stable supportive shoes.

Contrary to our hypothesis, stable supportive shoes improved knee pain on walking more than flat flexible shoes.



**Centre for Health, Exercise and Sports Medicine**  
Department of Physiotherapy, The University of Melbourne  
Further information: Prof Rana Hinman [ranash@unimelb.edu.au](mailto:ranash@unimelb.edu.au)  
Publication: <https://doi.org/10.7326/M20-6321>

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# Self-directed Web-based Exercise & Behaviour Change Text Message Support for Knee Osteoarthritis: A Randomised controlled trial

## POPULATION

206 participants



45+ years



Clinical knee OA



Australian  
community

## ANALYSIS

Intention to treat

24

WEEKS

## STUDY ARMS

### CONTROL WEBSITE



**Information** about OA,  
exercise &  
physical activity

VS

### MY KNEE EXERCISE WEBSITE + TEXT MESSAGES



Same as control PLUS:

- general **physical activity guidance**
- 24-week **strengthening exercise plan**
- automated **behaviour change texts**



## MAIN RESULTS

The intervention group experienced **greater improvements in knee pain + physical function** compared with the control group at 24 weeks.

More participants in the intervention group experienced **clinically meaningful improvements in knee pain and in function** than in the control group.

## KEY MESSAGES



A **self-directed exercise web-intervention** with automated **behaviour change text messages improved knee pain + function** at 24-weeks.

This **unsupervised, free to access** intervention is an **effective option** to **improve access & support** people with OA & clinicians in recommended **OA exercise management**.

Intervention website access available @ [www.mykneeexercise.org.au](http://www.mykneeexercise.org.au)



### Centre for Health, Exercise and Sports Medicine

Department of Physiotherapy, The University of Melbourne

Further information: Rachel K. Nelligan [rachel.nelligan@unimelb.edu.au](mailto:rachel.nelligan@unimelb.edu.au)

Publication: Nelligan et. al, *JAMA Int Med* 2021; published online 12 April

doi:10.1001/jamainternmed.2021.0991



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# DOES INTRA-ARTICULAR INJECTION OF PLATELET-RICH PLASMA (PRP) IMPROVE SYMPTOMS AND JOINT STRUCTURE IN PATIENTS WITH KNEE OSTEOARTHRITIS?



Mean age 62 years

2 centres in  
Melbourne and Sydney



Change in knee pain  
scores on 0-10  
numeric rating scale



% change in medial  
tibial cartilage  
volume on MRI

- 288 participants, 50+ years, medial tibiofemoral knee OA
- Two primary outcomes, measured at baseline and 12 months

## Intervention:

3 x injections of leucocyte-poor platelet-rich plasma at weekly intervals



VS



## Placebo control:

3 x injections of saline at weekly intervals

## Changes in primary outcome measurements:

	Platelet-rich plasma	Placebo	Between-group difference (95% CI)	p-value
Mean change in knee pain scores on a 0 - 10 scale	-2.1	-1.8	-0.4 (-0.9, 0.2)	.17
Mean change in medial tibial cartilage volume	-1.4%	-1.2%	-0.2% (-1.9%, 1.5%)	.81

## Conclusion:

PRP compared with saline placebo **did not result in a significant difference in symptoms or joint structure** at 12 months



# EXPERT-MODERATED PEER-TO-PEER ONLINE SUPPORT GROUP FOR PEOPLE WITH KNEE OSTEOARTHRITIS

A MIXED METHODS RANDOMISED CONTROLLED PILOT AND FEASIBILITY STUDY



63 participants with self-reported knee osteoarthritis

## Objectives:

- 1 Study feasibility
- 2 Feasibility of delivering an online support group intervention in a research trial context

## Experimental group (n = 41):



Membership to 'My Knee Community' (existing online support group)



Recommended the 'My Joint Pain' website

## Control group (n = 22):

Recommended the 'My Joint Pain' website only



'My Knee Community' had **123 members** prior to recruiting study participants



Follow-up was at **three months** after baseline for both groups

## Main results:



Acceptable **retention** rate



**Low level of engagement** with online support group (15% didn't log in, median visits was 4 per person)



Qualitative data suggests potential for benefit through **connecting with others**

## Key message(s):



Large-scale study is **feasible**



Our online support group needs to be modified to **stimulate greater member engagement**



Should **target only those willing to actively engage with an online support group** (our evidence suggests this is a small subset of those with knee OA)

# COLLABORATIONS AND PARTNERSHIPS

CHESM benefits from working with other academics, industry, government, community organisations and consumers to help co-design, conduct and disseminate our work. The following is a summary of main partners and collaborators that CHESM has worked with throughout 2021.

## CHESM'S 2021 PUBLICATIONS



**396**  
different authors



**37%**  
national collaborators



**55%**  
international collaborators  
across **26 countries**

## CHESM 2021

### INTERNATIONAL COLLABORATIONS

Australia  
Belgium  
Brazil  
Canada  
China  
Denmark  
Egypt  
France  
Germany  
Ireland

Italy  
Nepal  
Netherlands  
New Zealand  
Nigeria  
Norway  
Saudi Arabia  
Singapore

Slovenia  
Spain  
Sri Lanka  
Sweden  
Switzerland

Tunisia  
United States  
United Kingdom

## EXTERNAL PARTNERS INCLUDED:

Allied Health Professions Australia  
Arthritis Australia  
ASICS Oceania  
Australian Diabetes Educators Association  
Australian Physiotherapy Association  
Australian Podiatry Association  
Dietitians Australia  
Exercise and Sports Science Australia  
Formthotics  
FutureLearn

Medibank  
Melbourne Disability Institute  
Musculoskeletal Australia  
National Disability Insurance Agency  
Occupational Therapy Australia  
Össur (Iceland)  
Osteopathy Australia  
Speech Pathology Australia  
Victorian College of the Arts

# NHMRC CENTRE OF RESEARCH EXCELLENCE

In December 2021, funding for our National Health and Medical Research Council Centre for Research Excellence - Translational Research in Musculoskeletal Pain (Osteoarthritis and Low Back Pain) expired. We were proud to have led this Centre which involved researchers from institutes including: University of Melbourne, University of Sydney, University of Queensland, Monash University, Keele University and University College London, UK.

Since its establishment in 2015, this CRE brought together over 20 institutes and industry partners from around the world. Ten chief investigators, 10 associate investigators, and over 60 early career researchers and PhD/Masters students contributed to a range of research and translational projects.

The CRE has:

- Completed a range of research projects into the effectiveness of innovative models of care for osteoarthritis and low back pain to address key evidence-practice gaps
- Published over 300 scientific articles in peer-reviewed journals
- Offered training & mentoring activities for early career researchers including monthly workshops/seminars, retreats and a mentoring program
- Maintained community engagement via workshops and through its website
- Developed and evaluated consumer resources including a website for low back pain which was launched by Arthritis Australia [www.MyBackPain.org.au](http://www.MyBackPain.org.au)



NHMRC Centre of Research Excellence  
**TRANSLATIONAL RESEARCH  
IN MUSCULOSKELETAL PAIN**  
CLOSING THE EVIDENCE-PRACTICE GAP



# EARLY CAREER TRAINING AND MENTORING PROGRAM

The Musculoskeletal Early Career Training and Mentoring program was established across CHESM and the research groups of Prof David Hunter at the University of Sydney and Prof Paul Hodges and Prof Bill Vicenzino at the University of Queensland. It comprises approximately 65 early career researchers, both students and post-doctoral fellows. Activities within this program are coordinated by a Training and Mentoring Committee which comprised 11 members in 2021 ranging from PhD students to research directors.

Activities included:

## SEMINAR SERIES

Seven seminars held across sites via Zoom. Topics included:

- “Career progression, planning for impact and successful grant metrics”,
- “Principles of behaviour change science in practice”,
- “Single case experiment designs: what are they, when can they be used and should we?”,
- “Identify your own strengths”,
- “What we wish we knew before becoming editors”,
- “Engaging Consumers and Community Members across the Research Spectrum: What we have learned at the RECOVER Injury Research Centre”,
- “Peer mentoring session: Applying for NHMRC Investigator Grants”.

## INFOGRAPHICS COMPETITION

Like previous years, high quality infographics were submitted to this annual competition. The winner was awarded \$800 for research-related activities; four runners up were each awarded \$300. CHESM’s research scientist, Bridget Graham won the annual competition for her infographic titled “Effectiveness of an internet delivered exercise and pain-coping skills training intervention for persons with chronic knee pain”.



# TEACHING AND LEARNING

A woman with dark hair, wearing a checkered blazer, is shown in profile, working on a laptop. The background is a blurred office environment with warm lighting and a modern design.

Whilst research is core business for CHESM, members participated in a range of teaching and learning activities in 2021. Some CHESM team members hold joint positions within the Department of Physiotherapy or School of Health Sciences as teaching and research academics. As such, a key part of their role is dedicated to specific teaching and learning. Prof Kim Bennell commenced a shared role as Graduate Research Co-ordinator for the Physiotherapy Department with Kate Hayward.

Other CHESM members who have research-focused positions contribute to specialist teaching in their areas of expertise. Research higher degree students also undertake teaching activities including marking and giving lectures and tutorials in order to gain experience for their future careers. Given the pandemic, most of the teaching was remotely delivered. CHESM team members contributed to a range of University of Melbourne programs including the Doctor of Physiotherapy, Masters of Sports Medicine, Masters of Information Systems, Graduate Certificate in Health Informatics and Digital Health, Masters of Clinical Rehabilitation and Masters of Physiotherapy.

We were fortunate to have several domestic students who completed placements with CHESM throughout the year. This included 3 Doctor of Physiotherapy students for a research placement, a 2nd year Bachelor of Science student, and a 2nd year Bachelor of Biomedicine student who will spend two terms with the team.



# ENGAGEMENT AND IMPACT

Ensuring that research has an impact is a major goal for CHESM and we work with key stakeholders including consumers, clinicians, health insurers, professional organisations, industry, and consumer organisations to co-design, conduct and disseminate research. We highlight several examples of work in 2021 that demonstrates the link between research, engagement and impact:

## PHYSIOTHERAPY EXERCISE AND PHYSICAL ACTIVITY FOR KNEE OSTEOARTHRITIS (PEAK) ONLINE TRAINING MODULES

Due to the rapid shift of physiotherapy services to telehealth in Australia and worldwide due to the COVID-19 pandemic, CHESM fast-tracked the release of its online training modules in April 2020. The modules were made available free-of-charge to all users. The modules guide health professionals in how to implement best-practice care to people with knee osteoarthritis, delivered over 5 one-to-one consultations via video-conferencing or during face-to-face 'in-person consultations. By the end of 2020, 6,400 people had registered across 97 different countries. In December 2021, CHESM published the results of an evaluation of the program that provided evidence of its reach and effectiveness

In 2021, the hosting platform was shifted onto FutureLearn and released in June 2021 with 1,585 joining the new course prior to the end of the year.

PEAK's FutureLearn version training modules are currently being translated and will be available in Spanish and Portuguese in 2022. This will help further implement evidence-based training and practice for the management of knee osteoarthritis and enhance the dissemination and implementation of our PEAK program internationally.

Available at: <https://www.futurelearn.com/courses/peak>

The screenshot shows the FutureLearn website interface. At the top, there's a navigation bar with 'Subjects', 'Courses', and 'Using FutureLearn' dropdowns, a search bar, and 'Sign in' and 'Register' buttons. The main content area features the course title 'Physiotherapy Exercise and Physical Activity for Knee Osteoarthritis (PEAK)' with a 4.6-star rating from 23 reviews. Below the title, a description states: 'Explore exercises and strategies for minimising pain and improving mobility of patients with knee osteoarthritis.' A 'Join course' button is visible, along with the text '1,845 enrolled on this course'. To the right, there's a large image showing a person's knee being examined by a healthcare professional. Below the image, there are four icons representing course details: 'Duration 4 weeks', 'Weekly study 2 hours', '100% online', and 'Unlimited \$31.67/month'. At the bottom, there's a navigation bar with links: 'Overview', 'Start dates', 'Requirements', 'Educators', 'Learner reviews', and 'More courses'. A 'Support' button is located in the bottom right corner.



## E-LEARNING FOR PHYSIOTHERAPISTS IN WEIGHT MANAGEMENT FOR PATIENTS WITH OSTEOARTHRITIS

National and international guidelines for osteoarthritis management universally recommend exercise, education and weight loss for those who have overweight or obesity. However, achieving sustainable weight loss is difficult at an individual level, and often requires clinician support and supervision for long-term success.

Our prior research suggests that patients with musculoskeletal pain believe it is important and appropriate for physiotherapists to address weight in their management so long as they have specialised training. CHESM researchers developed an online education program in weight management for physiotherapists. This program was evaluated in a randomised controlled trial. The results published in 2021 showed that the program improved physiotherapists' short-term confidence in knowledge and skills in weight management and reduced weight stigmatized attitudes. It was also well received with over 90% agreeing they would recommend the program to peers. The program was broadened for use by allied health clinicians and covering weight management for other chronic conditions as well. In November 2021, "EduWeight: Weight Management for Adult Patients with Chronic Disease" was released on the FutureLearn platform and 218 people had joined the course prior to the end of the year.

Available at: <https://www.futurelearn.com/courses/eduweight>



The screenshot shows the FutureLearn website interface. At the top, there's a navigation bar with 'Subjects', 'Courses', and 'Using FutureLearn'. A search bar is on the right. The main content area features the course title 'EduWeight: Weight Management for Adult Patients with Chronic Disease' with a description: 'Help your patients living with chronic disease to make long-term lifestyle changes related to eating and physical activity.' Below this is a 'Join course' button and a note that '379 enrolled on this course'. To the right is a large image of a healthcare professional in a white coat holding a clipboard, with various fruits (oranges, kiwis, grapes) and a blue dumbbell in the foreground. At the bottom, there are icons for 'Duration: 6 weeks', 'Weekly study: 6 hours', '100% online', and 'Unlimited: \$31.67/month'. A bottom navigation bar includes links for 'Overview', 'Start dates', 'Requirements', 'Educators', and 'More courses'. A 'Support' link is in the bottom right corner.

## INTERNATIONAL CORE CAPABILITY FRAMEWORK FOR PHYSIOTHERAPISTS TO DELIVER QUALITY CARE VIA VIDEOCONFERENCE

This framework was developed using an international Delphi process to achieve expert consensus on what core capabilities are required of physiotherapists to deliver quality care via videoconferencing (Davies et al. 2021 J Physio). The study received funding from the Australian Physiotherapy Association and the developed framework has been endorsed by the International Society for Telemedicine and eHealth. The framework has been promoted and housed on the websites of physiotherapy associations in 13 countries. It has been incorporated into the curricula of 3 national universities and informed competencies in Canada and Scotland. The framework has also been translated into Spanish.

The framework is available at: <https://healthsciences.unimelb.edu.au/departments/physiotherapy/chesm/clinician-resources/international-core-capability-framework-for-physiotherapists-to-deliver-quality-care-via-videoconferencing>

## REPORTS OF CLINICIAN AND CONSUMER EXPERIENCES WITH TELEHEALTH DURING THE COVID-19 PANDEMIC

The many allied healthcare services rapidly transitioning to telehealth delivery during the COVID-19 pandemic provided an ideal opportunity to investigate clinician and consumer experiences. CHESM worked with key stakeholders to conduct three projects collecting data via online surveys to evaluate the use of, attitudes towards, and perceived barriers and facilitators to the delivery of care via telephone and via video over the internet.

### 1) ALLIED HEALTH PROFESSIONS AUSTRALIA (AHPA) TELEHEALTH PROJECT

This study investigated the experiences of allied health professionals (speech therapists, chiropractors, exercise physiologists, occupational therapists, diabetes educators and podiatrists) and patients or their parents/carers. The surveys were designed in partnership with Allied Health Professions Australia, Diabetes Educators Association, Exercise and Sport Science Australia, Occupational Therapy Australia, Osteopathy Australia, Australian Podiatry Association and Speech Pathology Australia.

Representatives from these peak organisations worked closely with the research team to ensure the survey content, language and response options were appropriate and applicable to each allied health profession. A total of 388 people completed the survey. Findings were published in April 2021.

[https://healthsciences.unimelb.edu.au/\\_\\_data/assets/pdf\\_file/0009/3775923/Telehealth-by-allied-health-practitioners-during-the-COVID-19-pandemic-Report-April-2021.pdf](https://healthsciences.unimelb.edu.au/__data/assets/pdf_file/0009/3775923/Telehealth-by-allied-health-practitioners-during-the-COVID-19-pandemic-Report-April-2021.pdf)

### 2) AUSTRALIAN PHYSIOTHERAPY ASSOCIATION (APA) AND PHYSIOTHERAPY RESEARCH FOUNDATION TELEHEALTH PROJECT

CHESM in collaboration with the APA and researchers at the University of Queensland and Flinders University investigated the effectiveness of care delivered via videoconference by physiotherapists in Australia during the COVID-19 pandemic. The results were published in July 2021 in the *Journal of Physiotherapy*. A total of 207 physiotherapists in private practice or community settings and 401 patients who consulted a physiotherapist (individually and/or group) via videoconference participated.

<https://healthsciences.unimelb.edu.au/departments/physiotherapy/chesm/research-overview/telehealth-by-physiotherapists>

### 3) NATIONAL DISABILITY INSURANCE SCHEME (NDIS) TELEHEALTH PROJECT

This study investigated the experiences of NDIS participants, or their parents/carers, when accessing NDIS-funded allied healthcare support during the COVID-19 pandemic. The researchers worked closely with the National Disability Insurance Agency to design the survey with a total of 2,391 NDIS participants, family members, or carers completing the survey. Findings were published in May 2021.

<https://healthsciences.unimelb.edu.au/departments/physiotherapy/chesm/research-overview/chesm-ndis-study>

# WHAT WERE THE EXPERIENCES OF PHYSIOTHERAPISTS AND PATIENTS WHO USED VIDEOCONFERENCING DURING THE COVID-19 PANDEMIC?



cross-sectional  
national online  
surveys



qualitative  
analysis of free  
text responses

401 patients ≥ 18 years



207 physios in private  
practice / community

Separate customised surveys for  
physiotherapists and patients  
collected data about:



Implementation of  
videoconferencing:  
- cost  
- software used



Experiences using  
videoconferencing:  
- perceived effectiveness  
- safety  
- ease of use

## Key messages

- 1 Patients and physios had overall positive experiences using videoconferencing
- 2 Videoconferencing is a viable option for the delivery of physiotherapy care in the future

## Main results

**Patients (attending  
individual consults):**

- 94% found the technology easy to use
- 96% felt comfortable communicating
- 98% were satisfied with privacy / security
- 92% were satisfied with the management they received
- 99% felt safe doing prescribed exercises
- 83% reported that the consult was effective
- 47% likely to choose videoconferencing in the future, beyond the pandemic

**Patients (attending  
group consults):**

- 91%
- 86%
- 95%
- 93%
- 99%
- 89%
- 68%

**Physiotherapists:**

- 81% intend to continue to offer individual videoconferencing consults beyond the pandemic
- 60% intend to continue to offer group videoconferencing consults beyond the pandemic



**Centre for Health, Exercise and Sports Medicine**  
Department of Physiotherapy, The University of Melbourne  
Further information: Prof Kim Bennell, [k.bennell@unimelb.edu.au](mailto:k.bennell@unimelb.edu.au)  
DOI: <https://doi.org/10.1016/j.jphys.2021.06.009>

This work was supported by funding from:



Physiotherapy  
Research  
Foundation





## Participant Experiences with Allied Healthcare Services Funded by the National Disability Insurance Scheme During COVID-19

**Aim:** to investigate via online survey the experiences of NDIS participants, or their parents/carers, when accessing NDIS-funded allied healthcare support during the COVID-19 pandemic



**2,391** people completed the survey



**52%** female



**29%** aged 0-18 years  
**67%** aged 19-64 years  
**4%** aged 65+ years



All states and territories represented

### During the COVID-19 pandemic:

**57%** experienced continuation of at least one allied healthcare support in-person

**28%** experienced cancellation of at least one allied healthcare support (due to cancellation by the provider or participant inability/unwillingness to transition to remote delivery)

**63%** experienced transition of at least one allied healthcare support to remote delivery (66% via video and 34% via telephone)

### Of those who had consultations remotely delivered...

**>62%** were happy with the **privacy/security** **>70%** felt **safe** during the consultation

**>50%** found the technology **easy to use** and felt **comfortable communicating** **>50%** believed the care they received was **effective** and were happy with the **management** they received

**11-13%** believed remotely delivered consultations were **better than being in-person**, and **31-33%** indicated they were **likely to choose to use** such services after the pandemic



Advantages of remotely delivered consultations included **convenience**, **accessibility**, and **reduced waiting time**



Disadvantages of remotely delivered consultations included **lack of physical contact**, **difficulty communicating**, and **lack of visual contact**



There were no differences in experiences with telephone or video



Experiences did not differ according to age, disability, geographical remoteness, or language spoken at home

**Findings suggest that respondents had positive experiences using remotely delivered services during the COVID-19 pandemic. One-third would be interested in using such services in the future.**



Centre for Health, Exercise and Sports Medicine  
Department of Physiotherapy, The University of Melbourne  
Further information: Dr Belinda Lawford  
[belinda.lawford@unimelb.edu.au](mailto:belinda.lawford@unimelb.edu.au)



# CHESM KNOWLEDGE TRANSLATION NETWORK

We have **established a network** from around the world in order to:

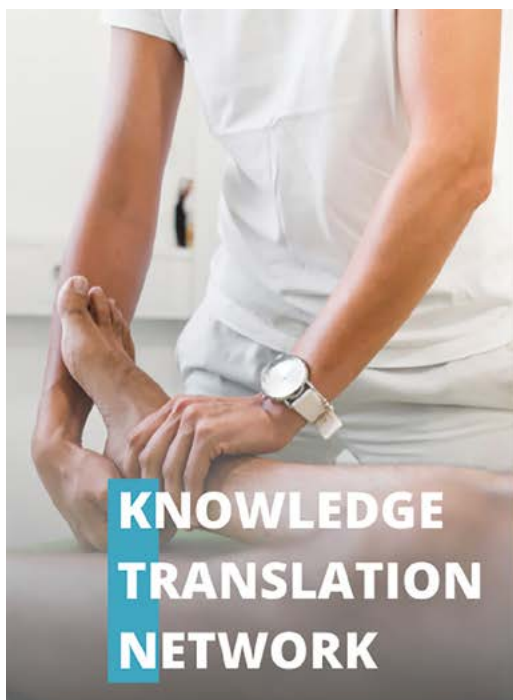
- **Share research findings.**
- Provide opportunities for the **general public and clinicians to volunteer/participate in CHESM studies.**
- **Collaborate with CHESM on research** activities.
- Disseminate **patient and clinician resources developed by CHESM** as a result of our research.

We are excited to have **>4,500 clinicians** and **>4,700 people** from **over 75 different countries** involved in the network already!

<https://healthsciences.unimelb.edu.au/departments/physiotherapy/chesm/join>

## CHESM HOLIDAY EVENT

After having so many events cancelled, rescheduled or shifted to virtual meetings, CHESM was lucky enough to get together face-to-face this year after 2 years of working remotely to celebrate the Christmas holiday. The team met at Brunswick Bowling club where we were able to exchange Secret Santa gifts and stories of all our experiences as well as celebrate the team's effort and successes over the past year.



**KNOWLEDGE  
TRANSLATION  
NETWORK**

## Do you want to

- ✓ find out about the latest research?
- ✓ collaborate with us on new projects?
- ✓ access evidence-based resources?



THE UNIVERSITY OF  
MELBOURNE

Centre for Health, Exercise and Sports Medicine

# COMMITTEE MEMBERSHIP

CHESM team members are active on numerous committees both within and external to the University, acting in both chair and membership roles.

## UNIVERSITY

### DEPARTMENT OF PHYSIOTHERAPY

Executive Committee  
Teaching and Learning Board  
PhD Advisory Committees  
CHESM Early Career Researcher Training and Mentoring Committee  
CHESM Special Interest Group  
Doctor of Physiotherapy Selection Committee  
Doctor of Physiotherapy Board of Examiners  
Doctor of Physiotherapy Curriculum Redesign Team

### SCHOOL OF HEALTH SCIENCES

Executive Committee  
Ethics Committee  
Triennial Performance Review Panels  
Faculty Infrastructure Program  
Faculty Research Committee  
Early & Mid-Career Researcher Network  
Early & Mid-Career Academic Association  
Graduate Research Committee  
Colloquium Organising Team

### FACULTY OF MEDICINE, DENTISTRY AND HEALTH SCIENCES

Levels D and E Promotions Committees  
Deans Fellowship Review Committee  
Research Training Committee  
Centre for Digital Transformation of Health, Workforce, and Education  
Neuroscience PhD Program steering committee  
Ways of Knowing Interprofessional Education Committee  
Florey Institute Promotions Committee  
Staff Reference Group for the University Post-COVID planning process

### CENTRAL

Human Research Ethics Committee Low to Negligible Risk 4C  
Human Research Ethics Advisor  
Occupational Health and Safety Committee Alan Gilbert Building

## EXTERNAL

### NATIONAL HEALTH AND MEDICAL RESEARCH COUNCIL (NHMRC)

Centre of Research Excellence Review Panel  
Investigator Grant Review Panel

### AUSTRALIAN PHYSIOTHERAPY ASSOCIATION

Telehealth Advisory Committee  
Physiotherapy Research Foundation Group Strategic Review Panel  
Collaborative Australian Physiotherapy Research Initiative Advisory board  
Conference Planning for Musculoskeletal Physiotherapy Australia  
Sports & Exercise Physiotherapy Group Committee

### AUSTRALIA & NEW ZEALAND MUSCULOSKELETAL CLINICAL TRIALS NETWORK (ANZMUSC)

Executive Network  
Osteoarthritis Special Interest Group

### AUSTRALASIAN INSTITUTE OF DIGITAL HEALTH

Scientific Conference Co-Chair  
Chair of Conference plenary session

### SPORTS MEDICINE AUSTRALIA

Victorian Council

### AUSTRALIAN AND NEW ZEALAND SOCIETY OF BIOMECHANICS

Executive Committee

### SPORTS AND EXERCISE PODIATRY AUSTRALIA

President

### MEDIBANK

"Better Knee, Better Me" Clinical Advisory group

### OSTEOARTHRITIS RESEARCH SOCIETY INTERNATIONAL (OARSI)

Osteoarthritis Management Programs: Joint Effort Initiative  
Steering committee and taskforces  
Exercise & Rehabilitation Discussion Group Committee and Early Career Researcher Sub-committee  
Ethics & Governance Committee  
Finance Committee  
Young Investigator Committee  
Communications Committee  
Sport, Exercise, Physical Activity and Prevention of Osteoarthritis - Special Interest Group



**ROYAL AUSTRALIAN COLLEGE OF GENERAL PRACTITIONERS**

Handbook of Non-Drug Interventions (HANDI)

**AUSTRALIAN PODIATRY ASSOCIATION**

National sports podiatry specialization group

Conference

Organizing committee

Judging committee - rheumatology/musculoskeletal session

**AUSTRALIAN ACADEMY OF HEALTH AND MEDICAL SCIENCES**

Victorian Group Events Committee

**INTERNATIONAL FOOT AND ANKLE OSTEOARTHRITIS CONSORTIUM**

Steering Committee

**‘ALLIANCE FOR OPTIMIZING KNEE HEALTH AFTER INJURY’ (OPTIKNEE)****AUSTRALIAN CLINICAL TRIALS ALLIANCE****VIC GOV DEPT OF HEALTH & HUMAN SERVICES**

“Digital Health Capability Framework for Allied Health Professionals” governance committee

**JOURNAL EDITORIAL BOARDS**

CHESM team members held positions on the editorial boards of the following journals:

- Chiropractic & Manual Therapies
- Annals of Physical and Rehabilitation Medicine
- Osteoarthritis and Cartilage
- Frontiers in Sports and Active Living
- Frontiers in Pain Research
- Journal of Foot and Ankle Research
- BMC Musculoskeletal Disorders
- Journal of Physiotherapy
- Journal of Science and Medicine in Sport

**GRANT APPLICATION REVIEW**

CHESM team members have reviewed grants for the following organisations/funding bodies in 2021:

**NATIONAL**

- Australian Research Council Future Fellowships
- Australian Research Council Discovery projects
- Australian Research Council Discovery Fellowships
- Deutsche Forschungsgemeinschaft | German Research Foundation
- National Health and Medical Research Council Centre of Research Excellence
- National Health and Medical Research Council Investigator grants
- National Health and Medical Research Council Ideas grants
- University of Melbourne Faculty Trust Fellowships
- Arthritis Australia Grants Review Panel member
- Australia & New Zealand Musculoskeletal Clinical Trials Network seeding grants
- Physiotherapy Research Foundation

**INTERNATIONAL**

- Canadian Institute of Health Canada Chair grants
- Versus Arthritis UK
- Hong Kong Health and Medical Research Fund
- Organisation for Health Research and Development, The Netherlands
- Bath Institute for Rheumatic Diseases, UK
- Rheumafonds, Netherlands



## CHEM IN THE MEDIA

### POSITIVE NDIS OUTCOMES CONTINUED FOR MANY DURING COVID-19:

Mentioned 18 times with potential reach of 261.31k

ABC radio

Royal Australian College of General Practitioners

### MY KNEE EXERCISE CLINICAL TRIAL MENTIONED ON/IN:

Pursuit Article “Web-Based Exercise Program Improves Knee Arthritis Therapy”

ABC radio (ABC South East SA) Interview with Dr Rachel Nelligan, April 2021

ABC radio (ABC North and West SA) Interview with Dr Rachel Nelligan, April 2021

3RRR FM, Einstein A Go Go, Dr Rachel Nelligan, August 2021

### BETTER KNEE, BETTER ME CLINICAL TRIAL MENTIONED ON:

Pursuit Article “Treating Knee Arthritis with Online Exercise and Diet”

7News “New hope for osteoarthritis sufferers thanks to Melbourne trial”, December 2021

7News, Sydney, Sunrise “Osteoarthritis Program” Interview featuring Prof Kim Bennell, 6 December 2021

### RESTORE PRP CLINICAL TRIAL MENTIONED ON:

ABC Radio National Health Report with Dr Norman Swan broadcast, 29 November 2021

9News “Trial finds arthritis treatment no better than a placebo”, November 2021

painTRAINER mentioned in New York Times Article “How Psychologists Can Help Treat Chronic Pain”

## PODCASTS

### JOINT ACTION PODCAST

- Kim Bennell - How does exercise help?

### THE NAF PHYSIO PODCAST BY ADAM MEAKINS AND ERIK MEIRA

- Rana Hinman – Talking about Women in Science

### EXPANSIENCE'S OA PODCAST SERIES RUN BY SPRIM GLOBAL PARTNERS

- Kim Bennell - ‘Physical Exercise and Osteoarthritis’ available through Apple and Spotify. Translated into Spanish and French.





# INNOVATION / COMMERCIALISATION

## MY EXERCISE MESSAGES APP FOR KNEE OSTEOARTHRITIS

Mobile apps are a popular method for supporting people to implement positive behaviour changes required for chronic disease management. Evidence suggests mobile apps are effective for improving both mental and physical health. Compared to SMS, mobile apps offer greater flexibility in delivery and presentation of behaviour change messages and enhanced functionality for logging and monitoring exercise adherence over time. Mobile apps may also be able to be delivered at scale free of charge to the user which also overcomes limitations of costs involved with delivery of SMS. Unfortunately, health and lifestyle apps designed to modify health behaviours (physical activity, diet and sleep) contain low levels of theory-based behaviour change techniques.

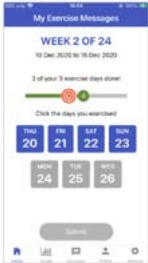
We thus adapted our evidence- and theory-informed SMS program into a mobile app called “My Exercise Messages” in collaboration with the University of Melbourne eResearch Group. My Exercise Messages iOS version is currently available in the Apple Store and the Android version is under development and beta testing, and will be available in 2022. My Exercise Messages is being evaluated for effectiveness through a randomised controlled trial (MappKO) that has begun.





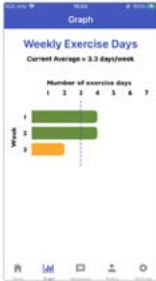
**Prompts with  
My Exercise Messages**

Notifications will prompt you to record your exercise sessions each week (or fortnight as you progress through the program)



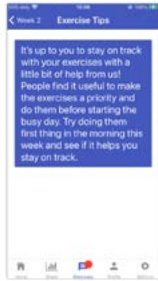
**Record with  
My Exercise Messages**

The home screen allows you to record the days you exercise - either as you go, or when prompted via a notification



**Track with  
My Exercise Messages**

The graph tab allows you to monitor and view your exercise progress over time



**Learn with  
My Exercise Messages**

Tailored messages and exercise tips will help you stick to your exercise program. Review these anytime at the messages tab

Skip

Next

Skip

Next

Skip

Next

Next

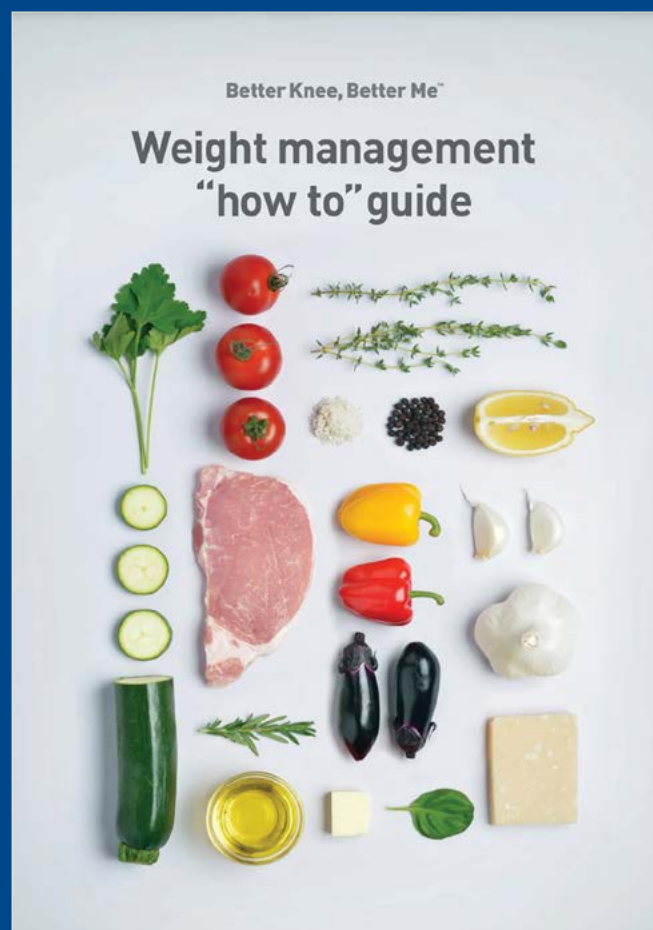
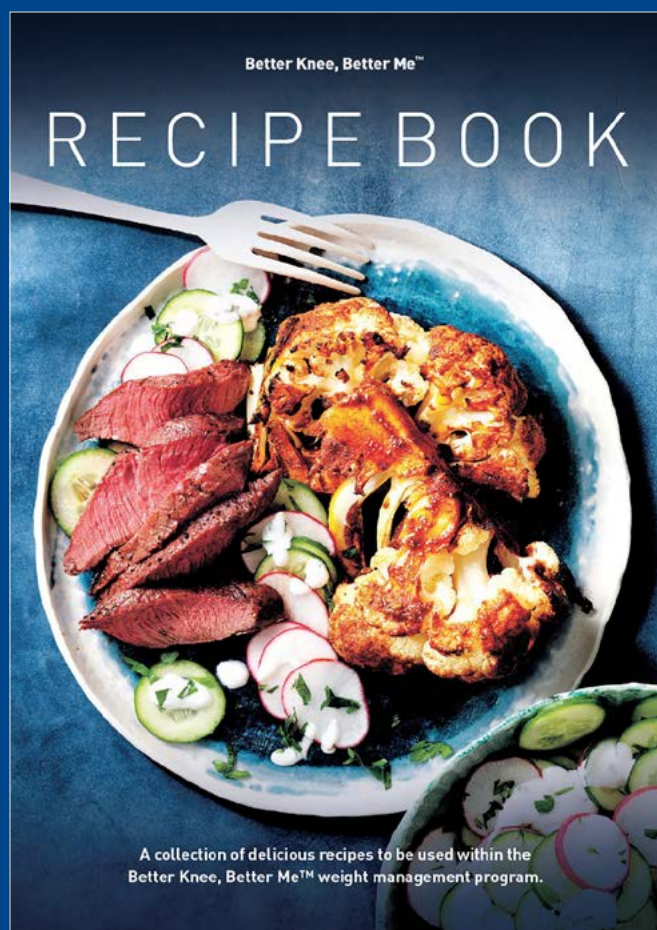


## MEDIBANK BETTER KNEE, BETTER ME™ PROGRAM ROLLED OUT

<https://www.medibank.com.au/health-support/health-services/better-knee-better-me/>

As a result of our Better Knee, Better Me™ Trial, Medibank has scaled up and released the program for its eligible members. There is no fee to enrol or participate in the program for eligible Medibank members who have joint replacement surgery included in their hospital cover.

The paper reporting the clinical trial of the program in 412 Medibank members “Comparing Video-Based, Telehealth-Delivered Exercise and Weight Loss Programs With Online Education on Outcomes of Knee Osteoarthritis” was published November 2021 in the Annals of Internal Medicine.



# POSTGRADUATE STUDENTS

During 2021, CHESM staff supervised 7 research higher degree (PhD) students, and one Masters (MPhil) student.

## CURRENT STUDENTS

NAME	POSITION	MEMBER
<b>My-Linh Nguyen (PhD)</b>	Using behavioural economics and health behaviour theory to improve participation in physical activity	Prof Rana Hinman Prof Kim Bennell Prof Anthony Harris Dr Michelle Hall Dr Amanda Rebar
<b>Rachel Nelligan (PhD)</b>	E-health to increase uptake of exercise and physical activity in people with knee osteoarthritis	Prof Kim Bennell Prof Rana Hinman
<b>Patrick Rowe (MPhil)</b>	The prevention and management of ankle sprains and chronic ankle instability in netball	Dr Kade Paterson A/Prof Adam Bryant Prof Rana Hinman
<b>Josh Farragher (PhD)</b>	The effects of novel force control exercise on disability, biomechanical and neuromuscular adaptations in people with chronic low back pain	A/Prof Adam Bryant A/Prof Gavin Williams Dr Doa El-Ansary Dr Selina Parry Dr Adrian Pranata
<b>Travis Haber (PhD)</b>	Factors informing the conservative management of middle-aged and older adults with chronic hip pain	Prof Rana Hinman A/Prof Fiona Dobson Dr Michelle Hall
<b>Scott Starkey (PhD)</b>	Effect of neuromuscular exercise on joint contact forces in at risk and established knee osteoarthritis: secondary analyses of two randomized controlled trials	Prof Rana Hinman, Dr Michelle Hall Dr David Saxby Mr Tim Wrigley
<b>Pei Wei Chi (PhD)</b>	Effect of modifiable athletic footwear features on knee joint contact forces in healthy young females and older adults with knee osteoarthritis	A/Prof Adam Bryant, Prof Rana Hinman Dr Kade Patterson Dr Wen Wu
<b>Luke Davies (PhD)</b>	Enhancing physiotherapy care delivered via telehealth	Prof Kim Bennell Prof Rana Hinman Dr Belinda Lawford Prof Trevor Russell

## PHD CONFIRMATION SEMINAR

NAME	TITLE	SUPERVISORS	DATE
<b>Travis Haber (PhD)</b>	Enhancing patient-centred care of middle-aged and older adults with chronic hip pain	Prof Rana Hinman A/Prof Fiona Dobson Dr Michelle Hall	1 June 2021
<b>Luke Davies (PhD)</b>	Enhancing physiotherapy care delivered via telehealth	Prof Kim Bennell Prof Rana Hinman Dr Belinda Lawford Prof Trevor Russell	30 March 2021

## PHD COMPLETION SEMINAR

NAME	TITLE	SUPERVISORS	DATE
<b>Rachel Nelligan (PhD)</b>	Digitally-delivered exercise for people with knee osteoarthritis	Prof Kim Bennell Prof Rana Hinman	6 July 2021 <i>Completed December 2021</i>
<b>Josh Farragher (PhD)</b>	Muscle strengthening and neuromuscular control retraining for the treatment of chronic low back pain	A/Prof Adam Bryant A/Prof Gavin Williams Dr Doa El-Ansary Dr Selina Parry Dr Adrian Pranata	2 March 2021 <i>Completed November 2021</i>

## MPHIL CONFIRMATION SEMINAR

NAME	TITLE	SUPERVISORS	DATE
<b>Patrick Rowe (MPhil)</b>	The prevention and management of ankle sprains and chronic ankle instability in netball	Dr Kade Paterson A/Prof Adam Bryant Prof Rana Hinman	25 May 2021



# RESEARCH GRANTS

New grants in 2021. CHESM Researchers are indicated in bold.

GRANTING BODY	INVESTIGATORS	PROJECT TITLE	DURATION	TOTAL GRANT
Arthritis Australia National Grant Scheme	<b>Lawford BJ</b> <b>Merolli M</b> <b>Hinman RS</b> <b>Dobson F</b>	Can physical function be assessed accurately via telehealth? A validity and reliability study of performance-based tests in people with chronic lower limb musculoskeletal conditions	2021	\$15,000
Melbourne Disability Institute	<b>Lawford BJ</b> <b>Bennell K</b> <b>Hinman R</b>	Supporting the Fragile X community virtually: what works?	2021	\$8,000
Universitas 21	<b>Merolli M</b>	"Digital Physiotherapy Practice: A Capabilities Framework for Education and Workforce Development"	2021-2022	\$10,000
Women in STEM and Entrepreneurship Grant, Department of Industry, Science, Energy and Resources	Celeste, C <b>Hall M</b> Diamond L Dick T Kean C Maharaj J Barzan, M Verma S	Biomechanics Research Innovation Challenge: 100 girls, 100 days 100 stories	2021-2022	\$246,173
The University of Melbourne	Magee M <b>Hall M</b> Hayward K McKibben G McKeever S Jarden R Hui F	Innovate, Ignite, Initiate – The ThinkBIG! Initiative	2021	\$25,000
The University of Melbourne Faculty of Medicine, Dentistry, and Health Science	<b>Lawford BJ</b>	Travel grant for early career researchers	2021	\$2,000
The University of Melbourne Faculty of Medicine, Dentistry, and Health Science Diversity and inclusion grant	Coleman M <b>Lawford BJ</b> <b>Hall M</b> Kefalianos E Hui F Hayward K Diemer K Jarden R McKibbin G	Exploring and prioritising diversity and inclusion issues experienced by early and mid career academics in the Faculty of Medicine, Dentistry and Health Sciences	2021	\$25,000

## CONTINUING GRANTS

GRANTING BODY	INVESTIGATORS	PROJECT TITLE	DURATION	TOTAL GRANT
ANZMUSC Clinical Trials Network	<b>Filbay S</b> <b>Hinman RS</b> Ganderton C Rooney J Hoffman T <b>Bennell KL</b>	“Development of a patient decision aid to inform evidence-based management of ACL injury”	2021 -2022	\$19,997
Medical Research Future Fund	<b>Bennell K</b> <b>Hinman R</b> <b>Hall M</b> <b>Lawford B</b> Francis J Simpson J Sumithran P	HipHealth – a pilot-tested telehealth program that incorporates education, exercise, and weight loss programs	2021 - 2026	\$1,120,000
NHMRC Partnership grant  Had to decline as overlap with MRFF grant	<b>Bennell K</b> <b>Hinman R</b> Sumithran P Keating C Simpson J Harris A Francis J <b>Hall M</b>	Improving outcomes for hip osteoarthritis: program evaluation of HipHealth, an evidence-based telehealth exercise and weight loss program	2022-2027	\$1,005,359 (NHMRC) \$292,322 (Medibank Private) Declined as overlap with MRFF gran
University of Melbourne – Medicine, Dentistry, and Health Sciences	<b>Bryant A</b>	Large Equipment Grant High resolution motion capture cameras to analyse human movement	2021	\$67,192 Physio Dept contribution \$22,398
Medibank Health Research Fund and Medibank Private	<b>Bennell K</b> <b>Hinman R</b> Keating C <b>Egerton T</b> <b>Kasza J</b> Briggs A Harris A Page C Fuller N Keefe F Rini C	“CareOA” linking Australians with specialised knee osteoarthritis treatment and support across the osteoarthritis trajectory - a randomised controlled trial evaluating two remotely-delivered scalable health services tested in the private health insurance setting	2018-2021	\$953,081

GRANTING BODY	INVESTIGATORS	PROJECT TITLE	DURATION	TOTAL GRANT
National Health and Medical Research Council Project Grant	Sherrington C <b>Hinman R</b> Crotty M Hoffman T Harvey L Taylor N Hassett L Tiedemann A	Physical activity coaching for adults with physical disabilities: a pragmatic randomised trial	2018-2021	\$1.371 million
National Health and Medical Research Council Program Grant	Hodges P <b>Bennell K</b> Hunter D Vicenzino B	Musculoskeletal pain and disability: improving outcomes through conservative management	2016-2020	\$10,000
National Health and Medical Research Council Project Grant	<b>Hinman RS</b> <b>Wrigley TV</b> <b>Paterson K</b> <b>Kasza J</b>	Footwear for self-managing knee osteoarthritis: the Footstep Trial	2017 – 2021	\$246,173
National Health and Medical Research Council Centre of Research Excellence (CRE)	Buchbinder R Maher C March L Day R <b>Hinman R</b> Harris I Ferreira M Glasziou P Green S Billot L	Australia & New Zealand Musculoskeletal (ANZMUSC) Clinical Trials Network	2018-2022	\$2.5 million
National Health and Medical Research Council Senior Research Fellowship	<b>Hinman RS</b>	Lifestyle management of knee osteoarthritis: closing the gaps to reduce disease burden	2019 – 2023	\$724,175
National Health and Medical Research Council 2019 Project Grant	<b>Hinman RS</b> Russell T Foster N <b>Kasza J</b> Harris A	Technology vs tradition: a non-inferiority trial comparing video to face-to-face consultations with a physiotherapist for people with knee osteoarthritis	2019 - 2023	\$1.24 million
National Health and Medical Research Council 2019 Project Grant	<b>Hall M</b> <b>Dobson F</b> <b>Allison K</b>	Strengthening exercise or combined strengthening and aerobic exercise for hip osteoarthritis: a RCT	2019 - 2022	\$868,134



## CONTINUING GRANTS

GRANTING BODY	INVESTIGATORS	PROJECT TITLE	DURATION	TOTAL GRANT
Versus Arthritis UK (formerly Arthritis Research UK)	Conaghan P McHugh G Kingsbury S Hensor E <b>Bennell K</b> Comer C	Evaluation and implementation of electronic rehabilitation programmes for chronic knee pain in the UK	2019-2022	GBP £238,317 \$437,503AUD
NHMRC Medical Research Future Fund Grant	Shields N <b>Bennell K</b> Taylor N Rice L Markovic T Bigby C Watts J Prendergast L	Improving muscle strength in young people with Prader-Willi syndrome	2019-2023	\$869,140
Griffith University Health Groups Seed Grant	Saxby DJ Diamond L Pizzolato C Lloyd D Barrett R Bryant A <b>Hinman RS</b> <b>Paterson K</b> Kelly L Vertullo C	Effects of commercially-available footwear on anterior cruciate ligament forces during provocative sporting tasks	2019-2020	\$55,729
NHMRC Project Grant	<b>Hall M</b> <b>Dobson F</b> <b>Allison K</b>	Strengthening exercise or combined strengthening and aerobic exercise for hip osteoarthritis: a RCT	2019-2023	\$868,134
NHMRC Emerging Leadership Investigator Grant.	<b>Paterson K</b>	Closing the evidence gaps to boost clinical outcomes for people living with disabling foot osteoarthritis.	2019-2023	\$632,475.41
Melbourne Disability Institute	<b>Lawford BJ</b> <b>Bennell KL</b> Spittle A <b>Hinman R</b>	The impact of the COVID-19 pandemic on the National Disability Insurance Scheme allied healthcare services and consumer experiences transitioning to telehealth	2020 – 2021	\$20,000
National Disability Insurance Agency in combination with Melbourne Disability Institute	<b>Lawford BJ</b> <b>Bennell KL</b> Spittle A <b>Hinman R</b>	National Disability Insurance Scheme participant experiences accessing services during the COVID-19 pandemic: a qualitative study	2020 - 2021	\$16,000
Allied Health Professions Australia	<b>Bennell KL</b> <b>Hinman RS</b> <b>Lawford BJ</b>	Telehealth by allied health practitioners in Australia during the COVID-19 pandemic	2020-2021	\$45,000

GRANTING BODY	INVESTIGATORS	PROJECT TITLE	DURATION	TOTAL GRANT
University of Melbourne, Mid-Career Seeding Ideas Grant Faculty of Medicine, Dentistry and Health Sciences	Egorova N <b>Hall M</b> <b>Dobson F</b>	From hip to hippocampus: using brain imaging to reveal the effect of exercise in hip osteoarthritis	2020-2021	\$24,180
Australian Physiotherapy Association – Physiotherapy Research Foundation	<b>Bennell K</b> <b>Hinman R</b> Russell T	Telehealth by physiotherapists in Australia during the COVID-19 pandemic	2020-2021	\$60,000
NHMRC Investigator Grant	<b>Bennell K</b>	Improving outcomes for people with knee osteoarthritis: overcoming patient and clinician barriers	2020-2024	\$2,848,640
National Health and Medical Research Council Emerging Leader Fellowship	<b>Filbay SR</b>	NHMRC Emerging Leadership Fellow	2021-2025	\$645,205
University of Melbourne Learning and Teaching Initiative Funding	Marino R <b>Merolli M</b> Capurro D Denehy L Sloan A	Telehealth education for entry to practice health professional students: A suite of core elements	2021	\$29,995
U/21 International Project Funds – Health Sciences	Marino R <b>Merolli M</b> Capurro D Denehy L Sloan A	Telehealth education for entry practice health professional students: A suite of core elements	2021	\$20,000
Department of Health Public Health & Chronic Disease Program Arthritis - Health Professional Education and Training	Consortium lead: Arthritis Australia (Mills A) Consortium members: Uni of Sydney (Hunter DJ), Uni of Melbourne ( <b>Hinman RS; Bennell KL</b> ), Arthritis & Osteoporosis Australia (Forlano R), Curtin Uni (Briggs A), Monash Uni (Buchbinder R), Australian Rheumatology Association (Hill C; Whittle S)	Building health professional knowledge and skills in arthritis diagnosis, management and care	2020-2023	\$2,000,000

# AWARD HIGHLIGHTS

## AUSTRALIAN RHEUMATOLOGY ASSOCIATION CONFERENCE AWARDS

CHESM PhD candidate Rachel Nelligan was awarded the “Best New Investigator prize” and Dr Kade Paterson was awarded “Best Allied Health Free Paper” award for the Footstep study titled “The Effect of Flat Flexible Versus Stable Supportive Shoes on Knee Osteoarthritis Symptoms: A Randomized Trial”.

## SPORTS MEDICINE AUSTRALIA

Dr Kade Paterson was awarded Best Paper for Clinical Sports Medicine (Senior Career Researcher) for the Footstep study titled “The Effect of Flat Flexible Versus Stable Supportive Shoes on Knee Osteoarthritis Symptoms: A Randomized Trial”.

## ACTA (AUSTRALIAN CLINICAL TRIALS ALLIANCE) ANNUAL SCIENTIFIC MEETING

CHESM PhD candidate Rachel Nelligan was awarded an Emerging Leader Investigator Award for the My Knee Exercise study titled “The Effects of a Self-directed Web-Based Exercise Program with Text Messages for Knee Osteoarthritis”.

## JOURNAL OF PHYSIOTHERAPY – PAPER OF THE YEAR AWARD

CHESM PhD candidate Luke Davies was awarded Paper of the Year 2021 for his paper “An international core capability framework for physiotherapists to deliver quality care via videoconferencing: a Delphi study”. The award is given to a paper that has the best combination of scientific merit and application to the clinical practice of physiotherapy.

## AUSTRALIA AND NEW ZEALAND BIOMECHANICS SOCIETY

PhD candidate Scott Starkey was awarded a Travel Award and was a Finalist for the New Investigator Award at the Australasian Biomechanics Conference.

## ACADEMIC PROMOTION

Dr Stephanie Filbay advanced her academic career and was promoted to Level C “Senior Research Fellow” in September 2021 at the University of Melbourne. Dr Fiona Dobson was promoted to Associate Professor in January 2021 at the University of Melbourne.

## 2021 DAME KATE CAMPBELL FELLOWS

The Dame Kate Campbell Fellowships were designed to recognise and reward outstanding research performance and demonstration of Faculty values. Prof Rana Hinman and Dr Kade Paterson were announced as Dame Kate Campbell Fellows in December 2021.

## FELLOW OF THE AUSTRALIAN ACADEMY OF HEALTH AND MEDICAL SCIENCES

In October 2021, Prof Rana Hinman was a newly elected Fellow of the Australian Academy of Health and Medical Sciences. These prestigious awards recognise the brightest minds in health and medical sciences across a range of fields, including research, industry and more, and encompass the nation’s research and science leaders.

## MDHS FACULTY AWARD – EXCELLENCE IN MENTORING

In December 2021, Prof Rana Hinman received the 2021 Medicine, Dentistry, and Health Sciences Faculty Award for Excellence in Mentoring.

## JOURNAL OF SPORT AND HEALTH SCIENCE OUTSTANDING REVIEWER AWARD

In 2021, Dr Belinda Lawford was acknowledged for her contributions to the peer review process at the Journal of Sport and Health Science.





# INVITED PRESENTATIONS

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A number of conference invited presentations were cancelled due to the COVID pandemic while others shifted to remote delivery. A summary of the presentations given by CHESM team members are shown below.

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## CONFERENCE PRESENTATIONS

- Australia Academy of Technology and Engineering - STELR (Science and Technology Education Leveraging Relevance), Role Model Series, "Keep Moving" – 2021
- American Physical Therapy Association Combined Sections Meeting (Orlando, Florida) – February 2021.
- Australian Rheumatology Association Conference – May 2021
- Osteoarthritis Research Society International Congress – May 2021
  - "Meet the Professor Young Investigator Mentorship Session"
  - "Digital health approaches for lifestyle management of osteoarthritis"
- University of Melbourne - Centre for Digital Transformation of Health: Becoming Digital in Health Sciences Research – June 2021
- Footwear Biomechanics Conference – July 2021
- University of Melbourne School of Health Sciences Graduate Researcher Colloquium – October 2021
- Allied Health Australia Virtual Conference – August 2021
- Infectious and Rheumatic diseases International Forum Shenzhen, China (remotely due to COVID) 'Update on exercise management for OA' – September 2021
- University of Queensland Recover Injury Research Centre - RECOVER Conference 2021: Research Driving Rehabilitation – October 2021
- Sports Chiropractic Symposium, "Plantar heel pain" – December 2021

## INTERNATIONAL WEBINARS

- Centre for Arthritis Research, University College Dublin, Ireland | Mechanisms of Exercise in Osteoarthritis – 2021
- Osteoarthritis Clinical Studies (OACS) Forum Series "Physical Activity & Exercise Behavior Change" – September 2021
- Select Medical USA. 'Pain coping skills training – teaching patients to deal with chronic pain' – September 2021
- Boston University Movement & Applied Imaging Lab "Journal Club" – February, March, & September 2021
- University of Sharjah (United Arab Emirates) 2 Day ACL Symposium "Recent Advances in Assessment and Rehabilitation Following ACL Injuries" – November 2021

## NATIONAL WEBINARS

- University of Tasmania - Menzies Institute for Medical Research and School of Medicine: "Mechanisms of Exercise in Osteoarthritis" – 2021
- La Trobe University, Department of Physiotherapy Seminar "My research pathway and career advice for early career researchers" – March 2021
- Western Health Allied Health Grand Rounds. Different ways of working. 'Allied health telehealth: lessons from the pandemic' – March 2021
- CHESM Special Interest Group Online Seminar "Day in the Life of a Researcher" – May 2021
- Australian Rheumatology Association Scientific Meeting – August 2021
- NHMRC Centre for Research Excellence Mentoring and Training Seminar "Tips for future NHMRC Investigator Grant Applicants" – October 2021
- University of Tasmania, Menzies Institute for Medical Research and School of Medicine, Seminar 'Anterior cruciate ligament injury - Long-term outcomes after surgical and non-surgical management' – November 2021
- CHESM hosted "Life of a Research Project" – November 2021
- Sports Medicine Australia, ACL injury management debate night – December 2021

# PUBLICATIONS

## REFEREED JOURNAL ARTICLES

1. Allen, K. D., Beauchamp, T., Rini, C., Keefe, F. J., Bennell, K. L., Cleveland, R. J., Grimm, K., Huffman, K., Hu, D. G., Santana, A., Saxena Beem, S., Walker, J., & Sheikh, S. Z. (2021). Pilot study of an internet-based pain coping skills training program for patients with systemic Lupus Erythematosus. *BMC Rheumatology*, 5(1). doi:10.1186/s41927-021-00191-6
2. Atukorala, I., Pathmeswaran, A., Makovey, J., Metcalf, B., Bennell, K. L., March, L., Chang, T., Zhang, Y., & Hunter, D. J. (2021). Can pain flares in knee osteoarthritis be predicted? *Scandinavian Journal of Rheumatology*, 50(3), 198-205. doi:10.1080/03009742.2020.1829035
3. Bakker, N. F., Schrijvers, J. C., van den Noort, J. C., Hall, M., van der Krogt, M. M., Harlaar, J., & van der Esch, M. (2021). A most painful knee does not induce interlimb differences in knee and hip moments during gait in patients with knee osteoarthritis. *Clinical Biomechanics*, 89. doi:10.1016/j.clinbiomech.2021.105455
4. Bennell, K. L., Bayram, C., Harrison, C., Brand, C., Buchbinder, R., Haas, R., & Hinman, R. S. (2021). Trends in management of hip and knee osteoarthritis in general practice in Australia over an 11-year window: a nationwide cross-sectional survey. *The Lancet Regional Health - Western Pacific*, 12. doi:10.1016/j.lanwpc.2021.100187
5. Bennell, K. L., Lawford, B. J., Metcalf, B., Mackenzie, D., Russell, T., van den Berg, M., Finnin, K., Crowther, S., Aiken, J., Fleming, J., & Hinman, R. S. (2021). Physiotherapists and patients report positive experiences overall with telehealth during the COVID-19 pandemic: a mixed-methods study. *Journal of Physiotherapy*, 67(3), 201-209. doi:10.1016/j.jphys.2021.06.009
6. Bennell, K. L., Paterson, K. L., Metcalf, B. R., Duong, V., Eyles, J., Kasza, J., Wang, Y., Cicuttini, F., Buchbinder, R., Forbes, A., Harris, A., Yu, S. P., Connell, D., Linklater, J., Wang, B. H., Oo, W. M., & Hunter, D. J. (2021). Effect of Intra-Articular Platelet-Rich Plasma vs Placebo Injection on Pain and Medial Tibial Cartilage Volume in Patients with Knee Osteoarthritis: The RESTORE Randomized Clinical Trial. *JAMA - Journal of the American Medical Association*, 326(20), 2021-2030. doi:10.1001/jama.2021.19415
7. Bullock, G. S., Beck, E. C., Collins, G. S., Filbay, S. R., & Nicholson, K. F. (2021). Hip internal and external rotation range of motion reliability in youth baseball players. *Journal of Sports Medicine and Physical Fitness*, 61(1), 75-79. doi:10.23736/S0022-4707.20.11126-5
8. Bullock, G. S., Menon, G., Nicholson, K., Butler, R. J., Arden, N. K., & Filbay, S. R. (2021). Baseball pitching biomechanics in relation to pain, injury, and surgery: A systematic review. *Journal of Science and Medicine in Sport*, 24(1), 13-20. doi:10.1016/j.jsams.2020.06.015
9. Bullock, G. S., Nicholson, K. F., Waterman, B. R., Niesen, E., Salamh, P., Thigpen, C. A., Shanley, E., Devaney, L., Collins, G. S., Arden, N. K., & Filbay, S. R. (2021). Health Conditions, Substance Use, Physical Activity, and Quality of Life in Current and Former Baseball Players. *Orthopaedic Journal of Sports Medicine*, 9(11). doi:10.1177/23259671211056645
10. Bullock, G. S., Nicholson, K. F., Waterman, B. R., Niesen, E., Salamh, P., Thigpen, C. A., Shanley, E., Devaney, L. L., Tokish, J. M., Collins, G. S., Arden, N. K., & Filbay, S. R. (2021). Persistent joint pain and arm function in former baseball players. *JSES International*, 5(5), 912-919. doi:10.1016/j.jseint.2021.05.001
11. Cameron, K. L., Allison, K., McGinley, J. L., Fini, N. A., Cheong, J. L. Y., & Spittle, A. J. (2021). Feasibility of a Dance PaRticipation intervention for Extremely prEterm children with Motor Impairment at prEschool age (Dance PREEMIE). *Early Human Development*, 163. doi:10.1016/j.earlhumdev.2021.105482
12. Cameron, K. L., FitzGerald, T. L., Albeshier, R. A., McGinley, J. L., Allison, K., Lee, K. J., Cheong, J. L. Y., & Spittle, A. J. (2021). Barriers and facilitators to community participation for preschool age children born very preterm: a prospective cohort study. *Developmental Medicine and Child Neurology*, 63(6), 675-682. doi:10.1111/dmcn.14809
13. Cameron, K. L., FitzGerald, T. L., McGinley, J. L., Allison, K., Cheong, J. L. Y., & Spittle, A. J. (2021). Motor outcomes of children born extremely preterm; from early childhood to adolescence. *Seminars in Perinatology*, 45(8). doi:10.1016/j.semperi.2021.151481
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16. de Valle, K., Dobson, F., Woodcock, I., Carroll, K., Ryan, M. M., Heatwole, C., Eichinger, K., & McGinley, J. L. (2021). Reliability and validity of the FSHD-composite outcome measure in childhood facioscapulohumeral dystrophy. *Neuromuscular Disorders*, 31(8), 706-715. doi:10.1016/j.nmd.2021.05.011
17. Denecke, K., Gabarron, E., Petersen, C., & Merolli, M. (2021). Defining participatory health informatics—a scoping review. *Informatics for Health and Social Care*, 46(3), 234-243. doi:10.1080/17538157.2021.1883028

18. Devezza, L. A., Robbins, S. R., Duong, V., Bennell, K. L., Vicenzino, B., Hodges, P. W., Wajon, A., Jongs, R., Riordan, E. A., Fu, K., Oo, W. M., O'Connell, R. L., Eyles, J. P., & Hunter, D. J. (2021). Efficacy of a Combination of Conservative Therapies vs an Education Comparator on Clinical Outcomes in Thumb Base Osteoarthritis: A Randomized Clinical Trial. *JAMA Internal Medicine*, 181(4), 429-438. doi:10.1001/jamainternmed.2020.7101
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23. El-Ansary, D., Marshall, C. J., Farragher, J., Annoni, R., Schwank, A., McFarlane, J., Bryant, A., Han, J., Webster, M., Zito, G., Parry, S., & Pranata, A. (2021). Architectural anatomy of the quadriceps and the relationship with muscle strength: An observational study utilising real-time ultrasound in healthy adults. *Journal of Anatomy*, 239(4), 847-855. doi:10.1111/joa.13497
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31. Haber, T., Hinman, R. S., Dobson, F., Bunzli, S., & Hall, M. (2021). How do middle-aged and older adults with chronic hip pain view their health problem and its care? A protocol for a systematic review and qualitative evidence synthesis. *BMJ Open*, 11(11). doi:10.1136/bmjopen-2021-053084
32. Hall, M., Dobson, F., Van Ginckel, A., Nelligan, R. K., Collins, N. J., Smith, M. D., Ross, M. H., Smits, E., & Bennell, K. L. (2021). Comparative effectiveness of exercise programs for psychological well-being in knee osteoarthritis: A systematic review and network meta-analysis. *Seminars in Arthritis and Rheumatism*, 51(5), 1023-1032. doi:10.1016/j.semarthrit.2021.07.007
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THE UNIVERSITY OF  
MELBOURNE

**Centre for Health,  
Exercise and Sports Medicine**  
[chesm.unimelb.edu.au](http://chesm.unimelb.edu.au)

**Director**  
Professor Kim Bennell  
[k.bennell@unimelb.edu.au](mailto:k.bennell@unimelb.edu.au)

**General Enquiries**  
Penny Campbell  
[penelope.campbell@unimelb.edu.au](mailto:penelope.campbell@unimelb.edu.au)

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**Address**  
Level 7  
Alan Gilbert Building  
161 Barry Street,  
Carlton VIC 3053