Strategies to get People with Kidney Disease Moving More: What can Kidney Clinicians do?

Brett Tarca & Paul Bennett

LEARNING LAB - RSA 2026 CHRISTCHURCH

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We respectfully acknowledge the Kaurna, Boandik, and Barngarla First Nations Peoples and their Elders past and present, who are the Traditional Owners of the lands that are home to our campuses across Adelaide and South Australia.

We have a dream....





We have a dream

We have a dream

That all the people on dialysis today

Black or white

Rich or poor

Will have abs of Ronaldo

Thighs of Usain Bolt

Arms of Valerie Adams

And the coordination of Sam Kerr

We have a dream

We have a dream

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The reality…



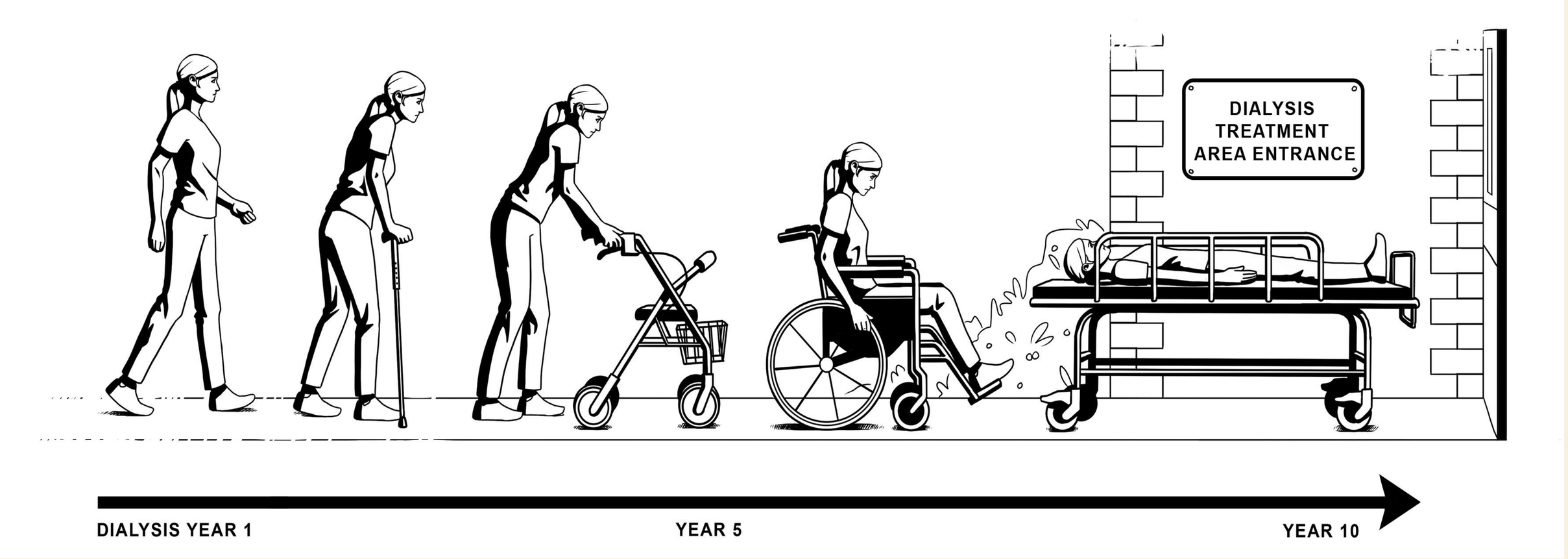


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The reality...



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Jeff – Dream to Reality



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Where to Start??????????????

1. Do we have exercise support in our hospital, rehabilitation clinic?
2. Do we have exercise professionals in cardiac, stroke or pulmonary who need new challenges?
3. Are there local exercise physiologists (EPs), physical therapists or kinesiologists?
4. Do we have a university program with exercise students?
5. Do we have a manager who is determined to increase patients' activity levels?
6. How could we use technology (television monitors, Apps, virtual reality)?
7. Does our health service provide exercise/lifestyle/chronic disease program reimbursement?
8. How will we measure success?
9. How do we encourage care partners and family members support?

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Workshop - Exercise 1

1. Find the handout titled “A patient from my clinical area”
2. Think back to your current or a previous nephrology clinical area you have worked in
3. Complete the page by yourself not talking to anyone.
    - Patient’s first name
    - Gender
    - Approximate age
    - Current treatment (HD, PD, transplant, CKD, supportive care)
    - 2-3 medical limitations relevant to exercise
4. On a coloured post it note list the greatest exercise barrier for this person

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Workshop - Exercise 1

1. Write their first name on a post-it-note and place on yourself
2. Take it in turns to introduce yourself as the patient you have chosen (take the role of the patient). If you like you can try to impersonate this person.
    - For example; “Hi, I am John, I am 73 and I have had diabetes for 30 years and been on haemodialysis for 10 years. I had a left leg below knee amputation last year.” The barriers I have to exercise are….
3. When everyone has introduced themselves place your ‘barrier sticky note’ on the poster on the wall.

Exercise or Physical Activity





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Exercise….take one pill daily



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Will it hurt the kidneys?

Ma et al. (2022)

12 Studies – Aerobic Training (6-24wks)

Stages 2-4 CKD

-0.10 - 2.54ml/min/1.73m^2

0.65 (0.3-1.0) ml/min/1.73m^2

Wu et al. (2020)

12 Studies – Aerobic + Strength Training (5-52wks)

Stage 1-5 CKD

-1.40 – 9.06 ml/min/1.73m^2

5.01 (2.37-7.65) ml/min/1.73m^2

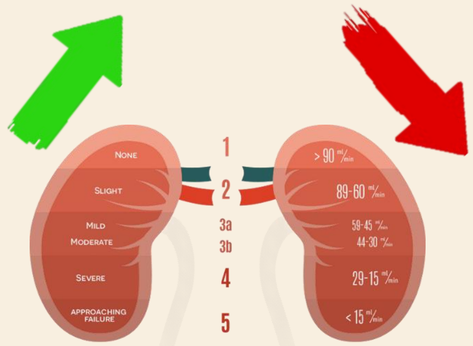
Wyngaert et al. (2018)

11 Studies – Aerobic Training (avg. 35wks)

Stages 3-4 CKD

-4.0 - 8.5 ml/min/1.73m^2

2.16 (0.18-4.13) ml/min/1.73m^2



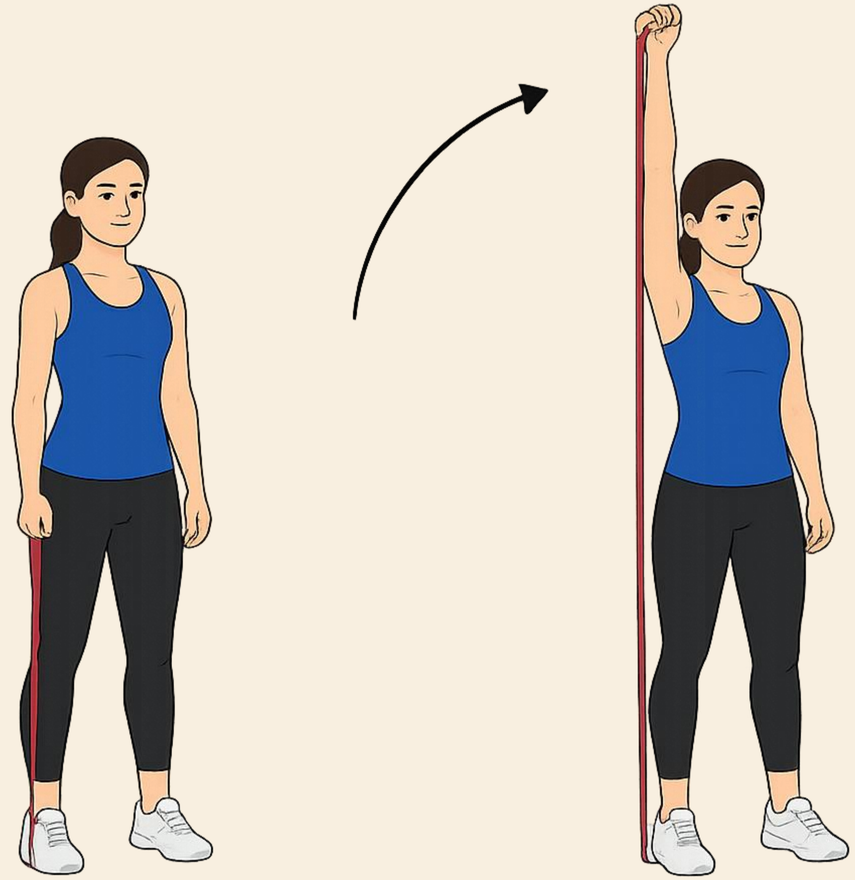
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Your turn:

Straight Arm Raises



Got a barrier? Tell us…

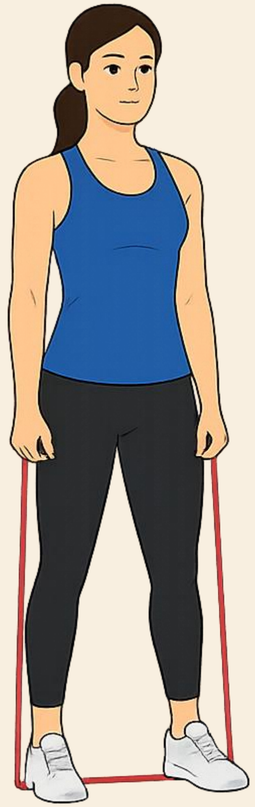
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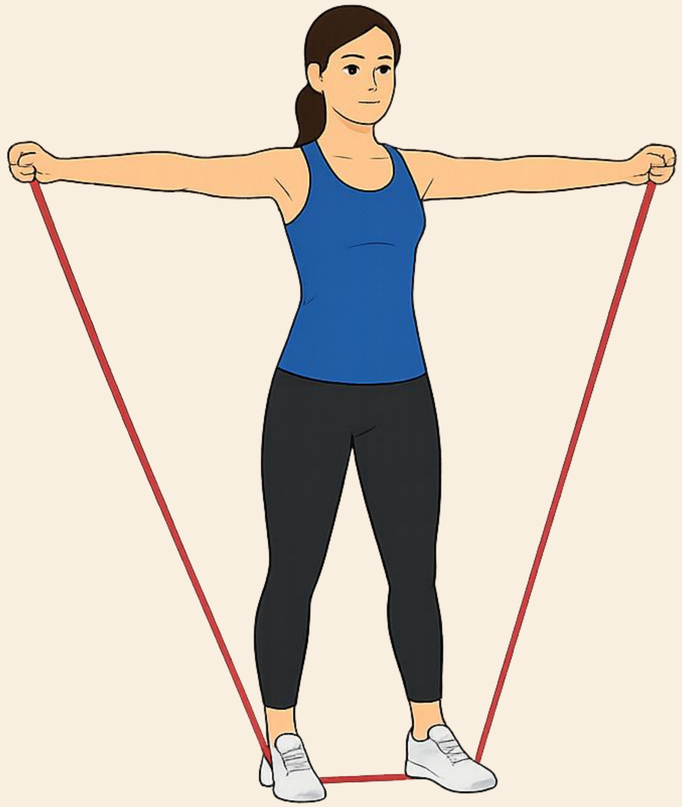
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Your turn:

Flys





Got a barrier? Tell us…

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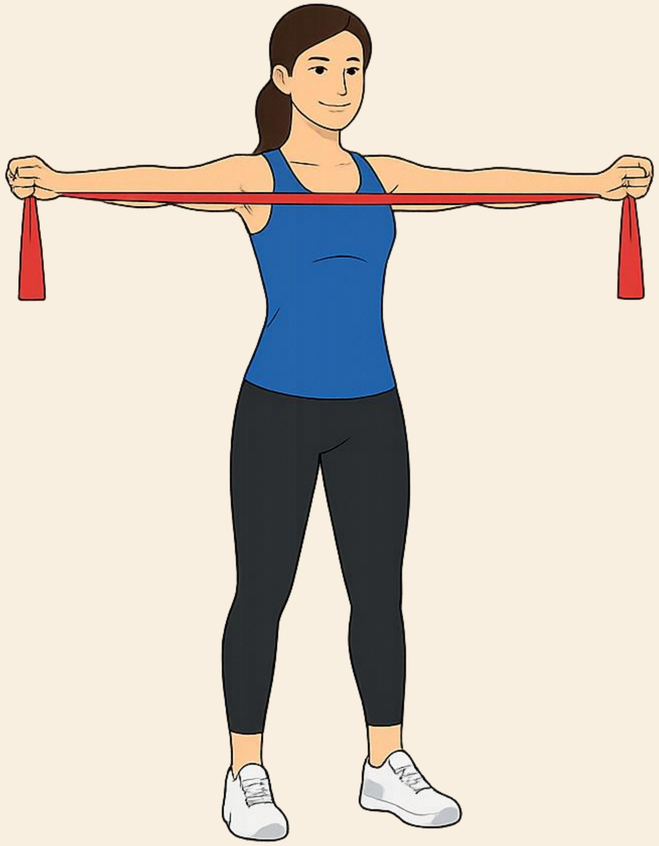
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Your turn:

Pull Aparts





Got a barrier? Tell us…

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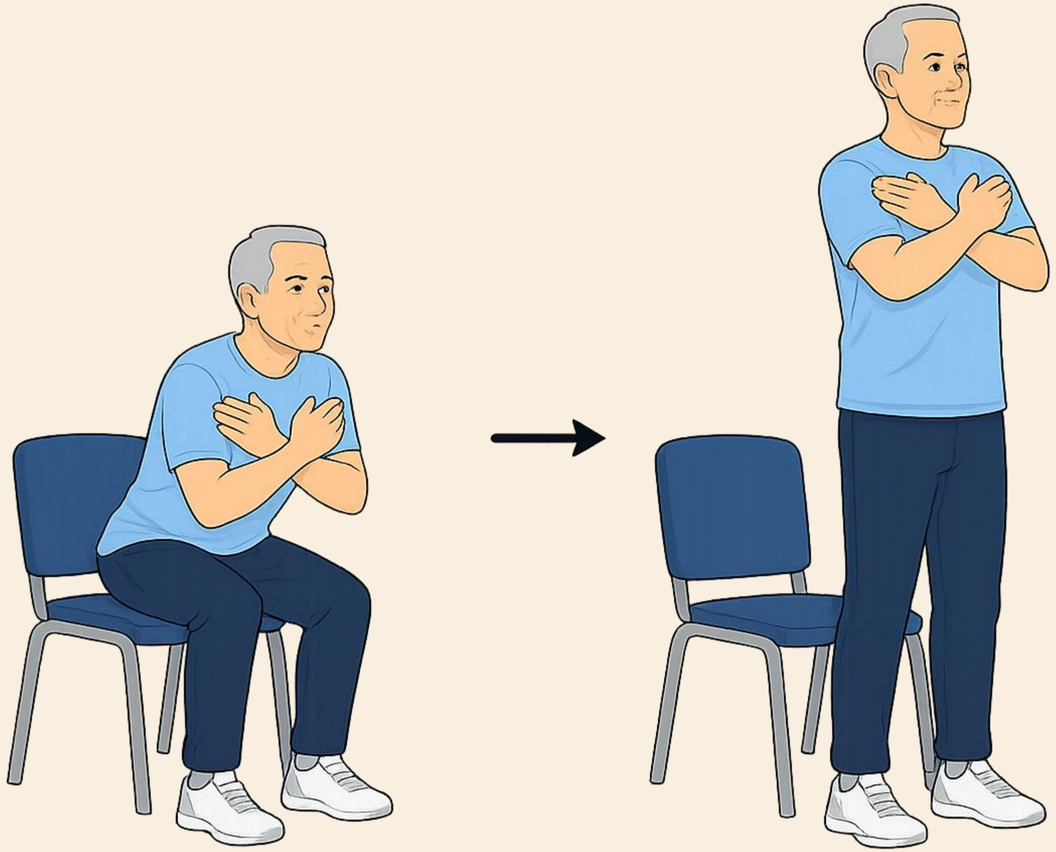
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Your turn:

30sec Sit to Stand

- Chair against wall
- Sit towards edge of seat
- Cross arms over chest
- How many can you do in 30secs?



Got a barrier? Tell us…

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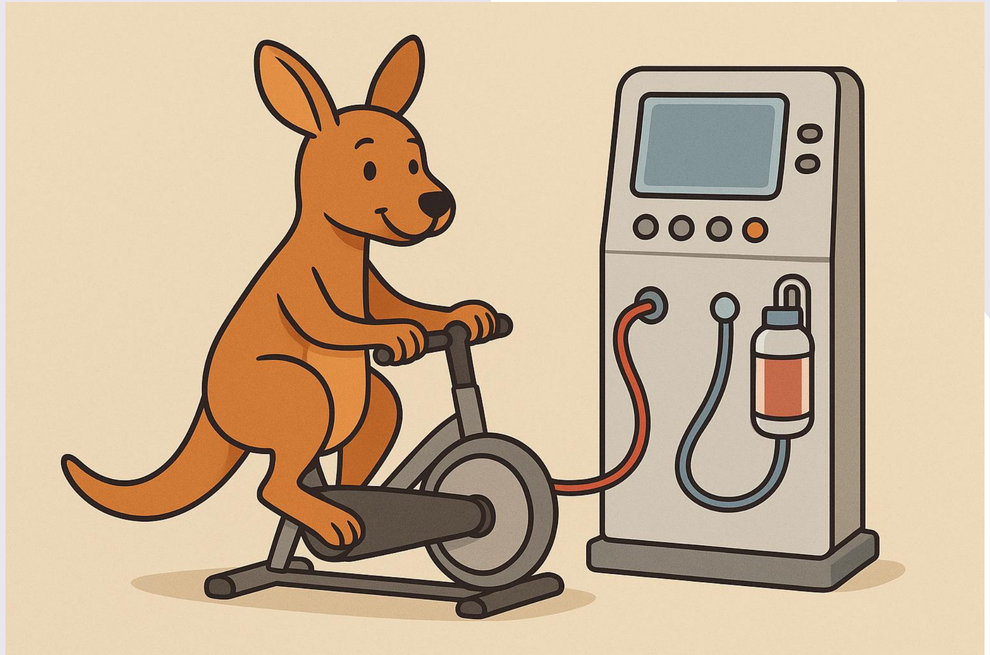
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Haemodialysis



Anaerobic (Resistance)

or

Aerobic (Cardiorespiratory)



Source: Bennett



Source: Bennett, Breugelmanns

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Group or Individual



Patients participating in the Zumba class.

Source: Bennett



Source: Bennett, Breugelmanns

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Mexico - Ankle Weights





Alemany 2022

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Mexico



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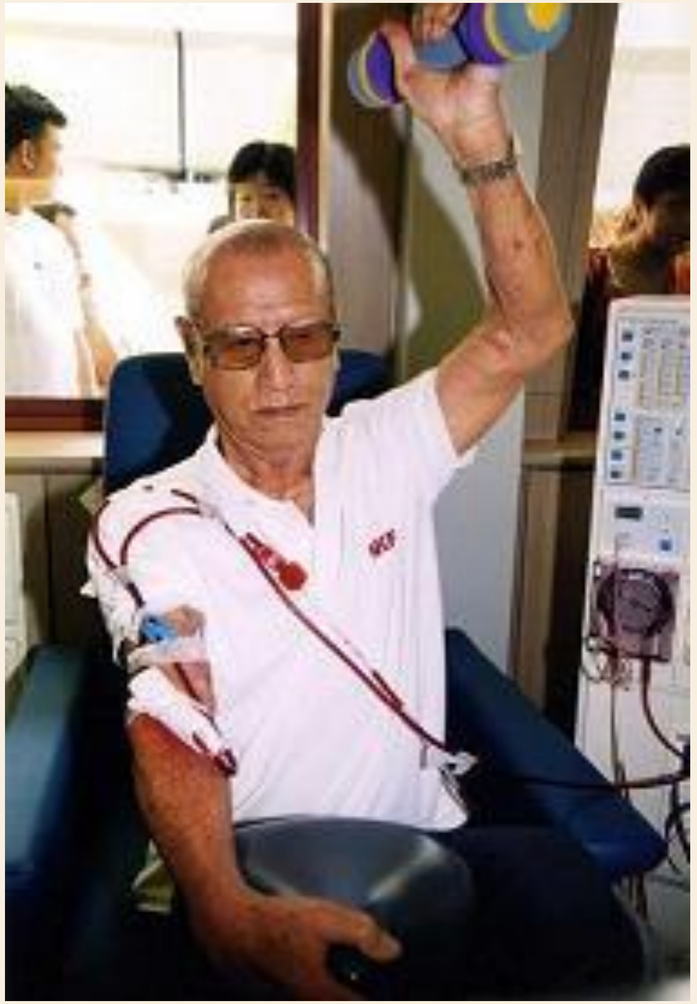
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Singapore





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Canada - Edmonton





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Canada – Winnipeg – Group Classes



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Italy – Walking Program



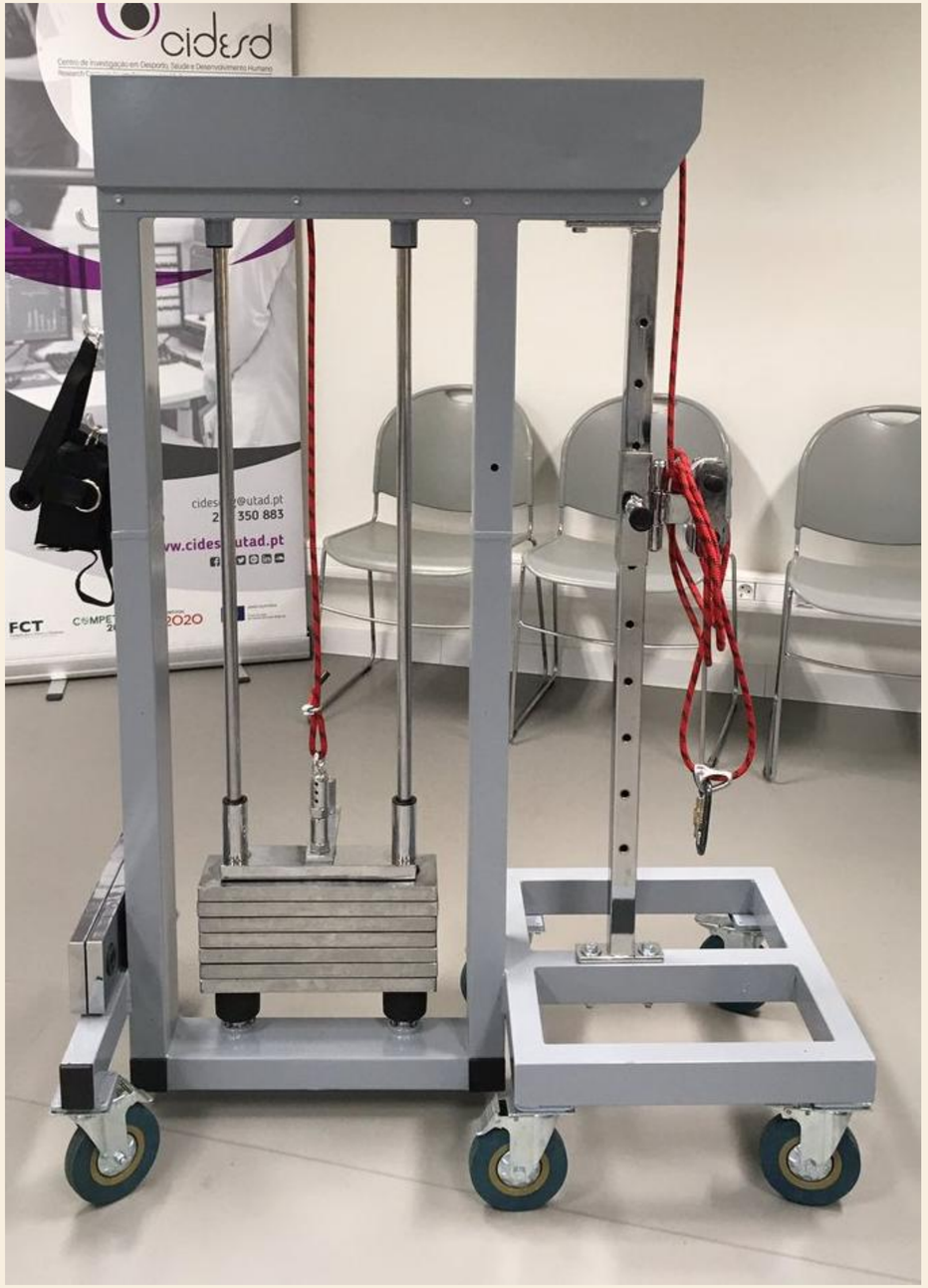
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Portugal



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Columbia – Group Sessions



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Wales



MacDonald 2022

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Adelaide - Australia

- Intradialytic Exercise
  - Resistance Machine
  - Therabands
- 10-year program
- Supported by rehabilitation center
- Exercise Physiologists and exercise physiology students
- 50% of patients exercising



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San Francisco - USA

- Haemodialysis Intradialytic Exercise
- Exercise Physiologists and Physical Therapists 2 days per week
- Theraband and home exercise program

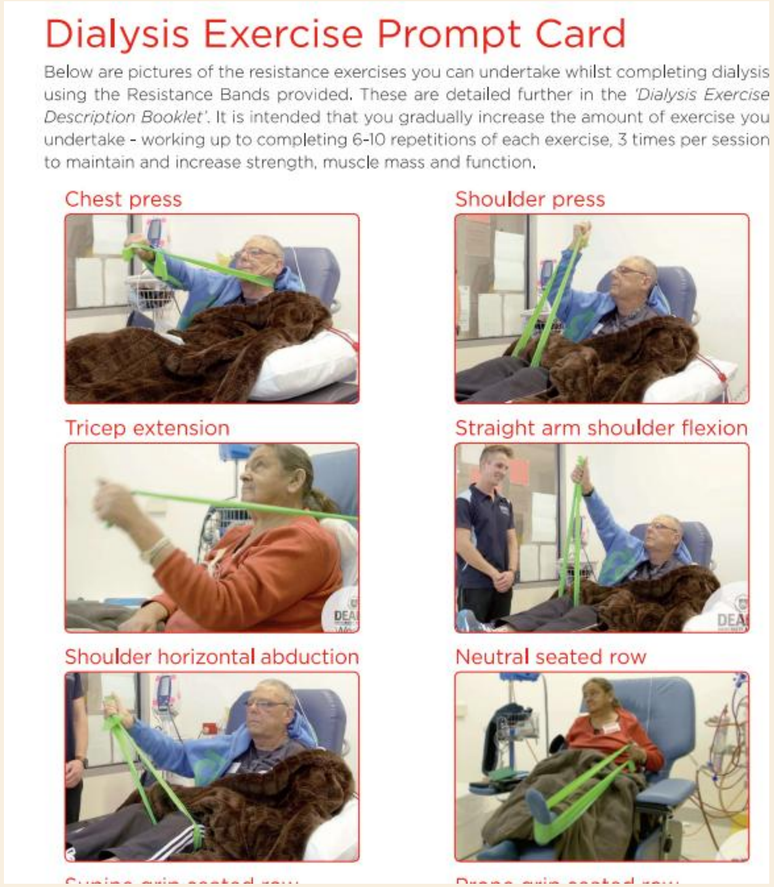


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Intradialytic Resource Packs

- 2 x Therabands
- 10 Brochures for Professionals
- 10 Brochures for Patients
- 20 page Instruction Booklet
- Sent to all 350 Australian Dialysis Units

- Website “Exercise in Dialysis” resource page



Dialysis Exercise Prompt Card

Below are pictures of the resistance exercises you can undertake whilst completing dialysis using the Resistance Bands provided. These are detailed further in the *'Dialysis Exercise Description Booklet'*. It is intended that you gradually increase the amount of exercise you undertake - working up to completing 6-10 repetitions of each exercise, 3 times per session to maintain and increase strength, muscle mass and function.

Chest press

Shoulder press

Tricep extension

Straight arm shoulder flexion

Shoulder horizontal abduction

Neutral seated row

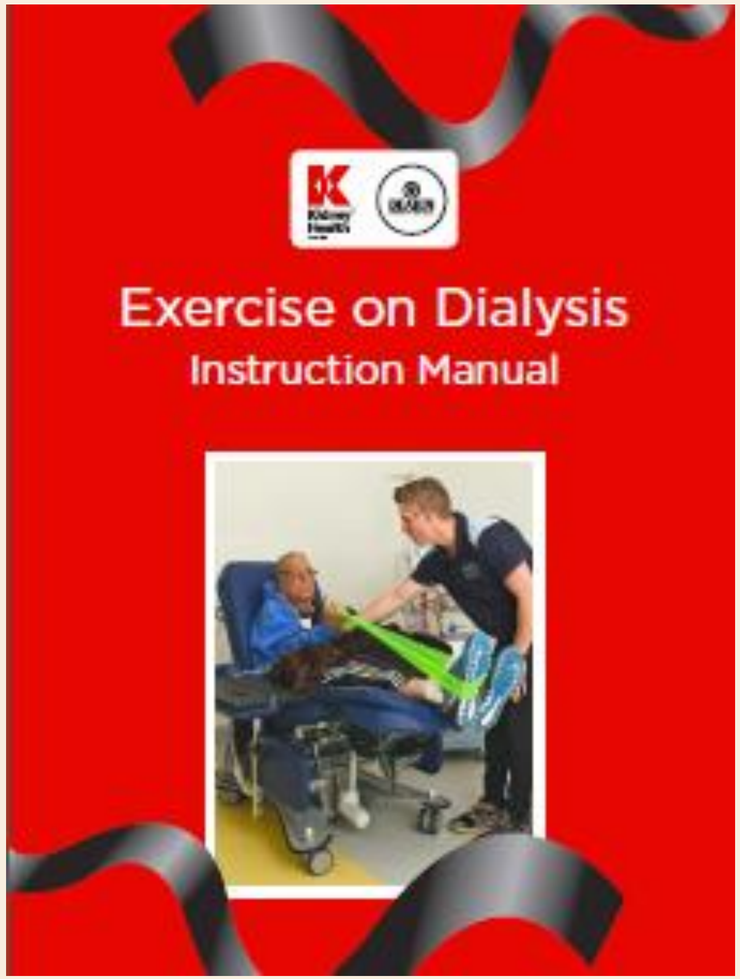
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Intradialytic Resource Packs





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USA, Israel, Canada & Australia

Laughter Therapy



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What about the fistula?

- Patients **<u>can</u>** exercise their fistula arm
    - As long as the fistula is well healed and the individual is not connected to a dialysis machine
    - Don’t apply weight to the area
- First **<u>2-hours</u>** of dialysis if during

Is it safe?

Pu et al. (2020)

Intradialytic Exercise for people receiving haemodialysis

4 **Adverse Events Reported from 15 trials**

2 **Low blood pressure**

2 **Muscle/Joint Injury or Pain**



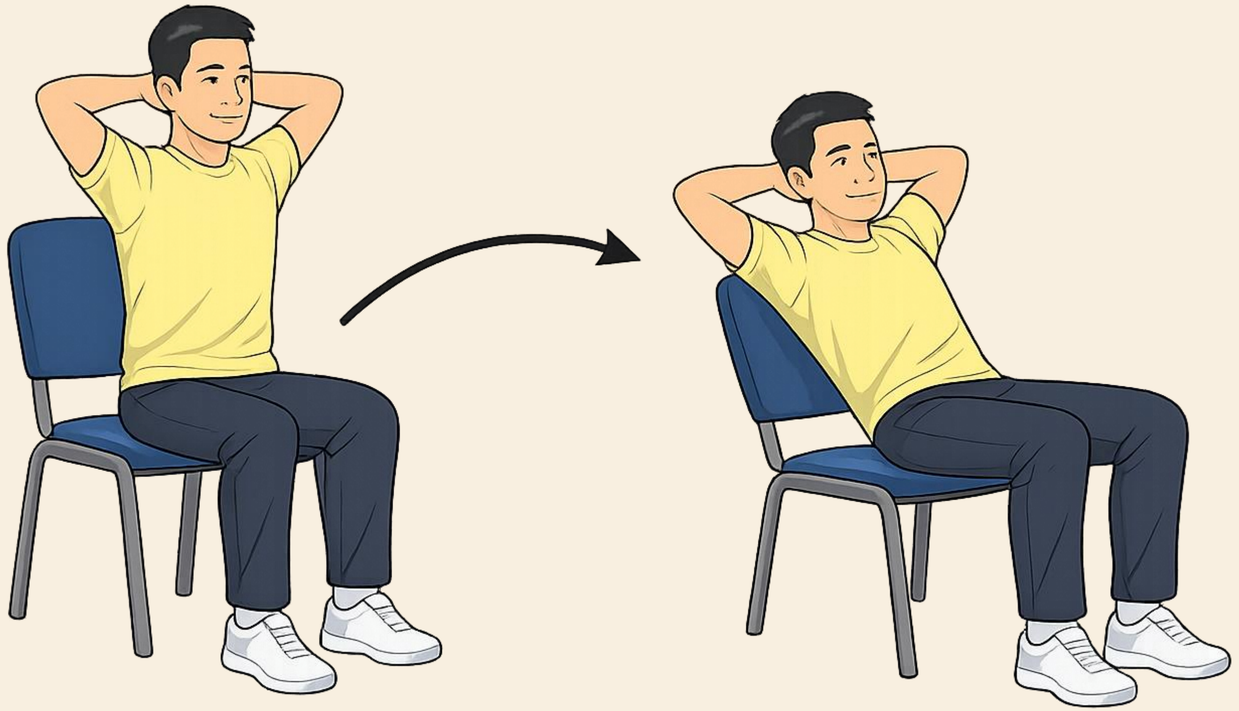
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Your turn: In the role of your patient……

Modified Sit-up



Got a barrier? Tell us…

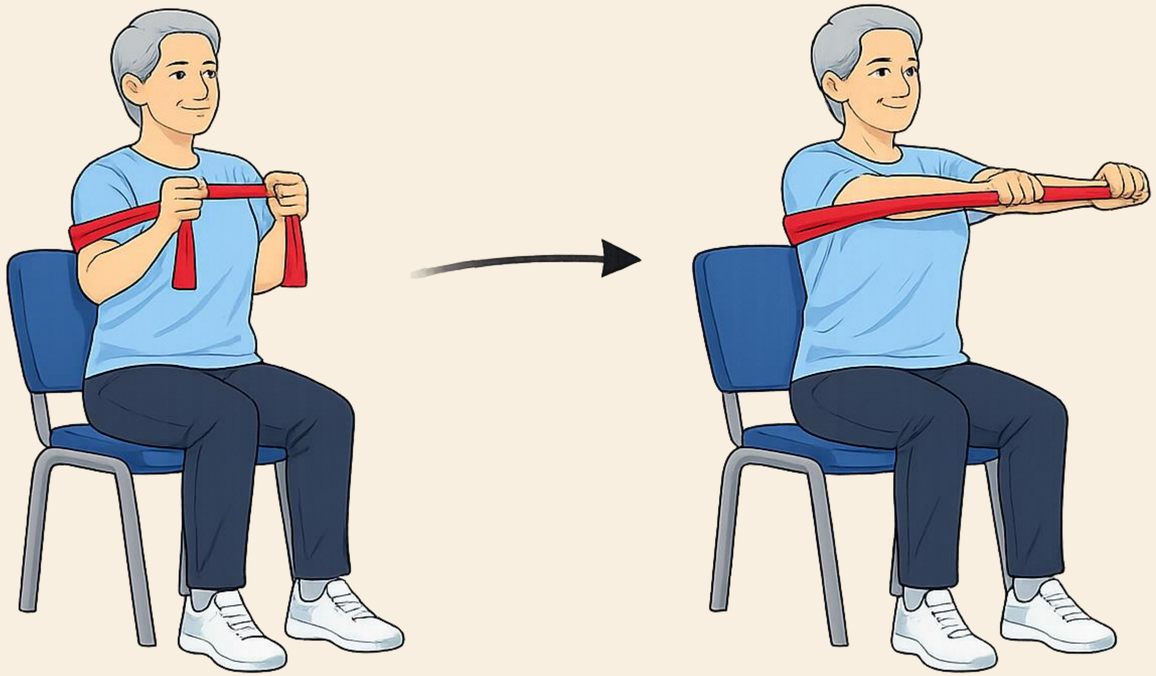
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Your turn: In the role of your patient……

Chest Press



Got a barrier? Tell us…

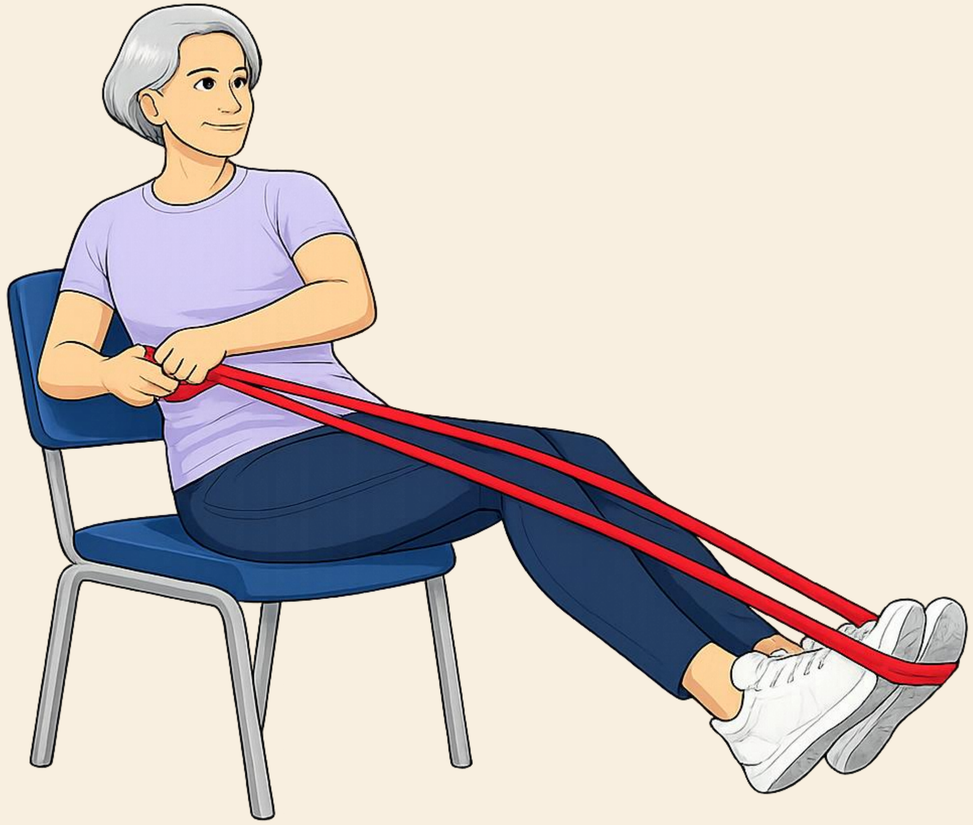
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Your turn: In the role of your patient……

Seated Twist



Got a barrier? Tell us…

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Forget Kt/V (GRRR!!)

Exercise Sustainability = ≥2N + U + (Q x CP) + $(EXP)^2$

- ≥2N = Greater than 2 passionate Nephrologists
- U = University collaboration for exercise professional clinical placements in renal clinics
- Q = Quality metrics that promote physical activity and QOL
- CP = Clinical pathway inclusion
- EXP = Exercise Professional Involvement

Sustainability = ≥2x2 + 1 + (1 x 1) + $(2)^2$ = >10

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Peritoneal Dialysis

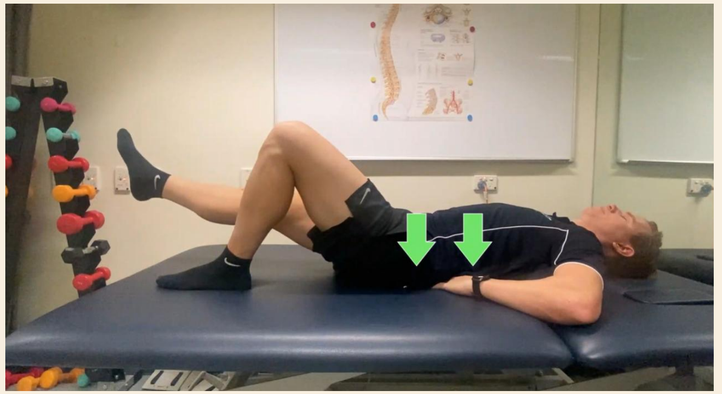


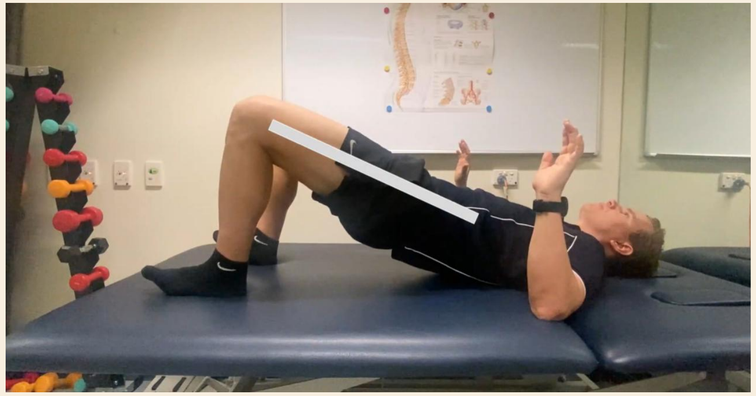
Australia – Prehab for PD

Tarca et al. (2026)











Thursday @ 11am

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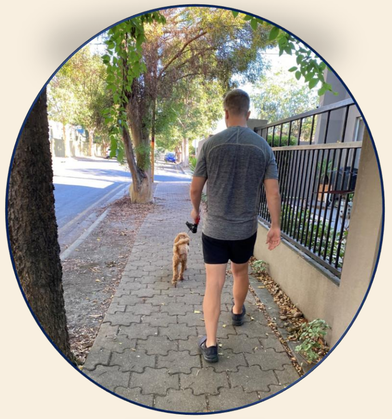
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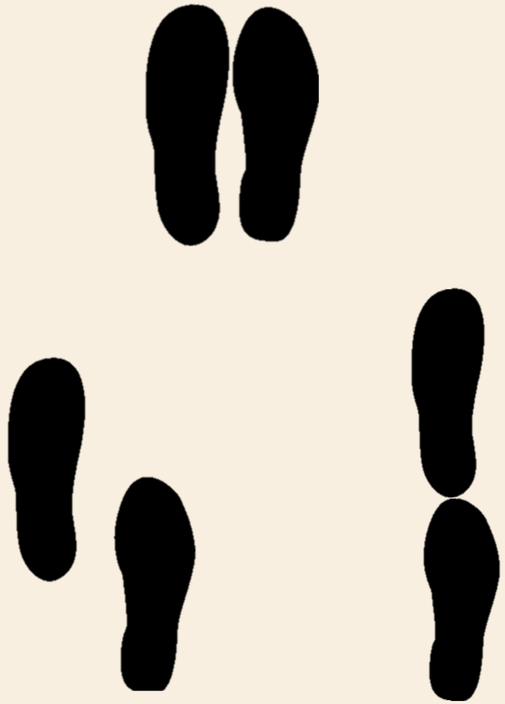
Australia & USA

Bennett et al. (2020) & Tarca et al. (2026)







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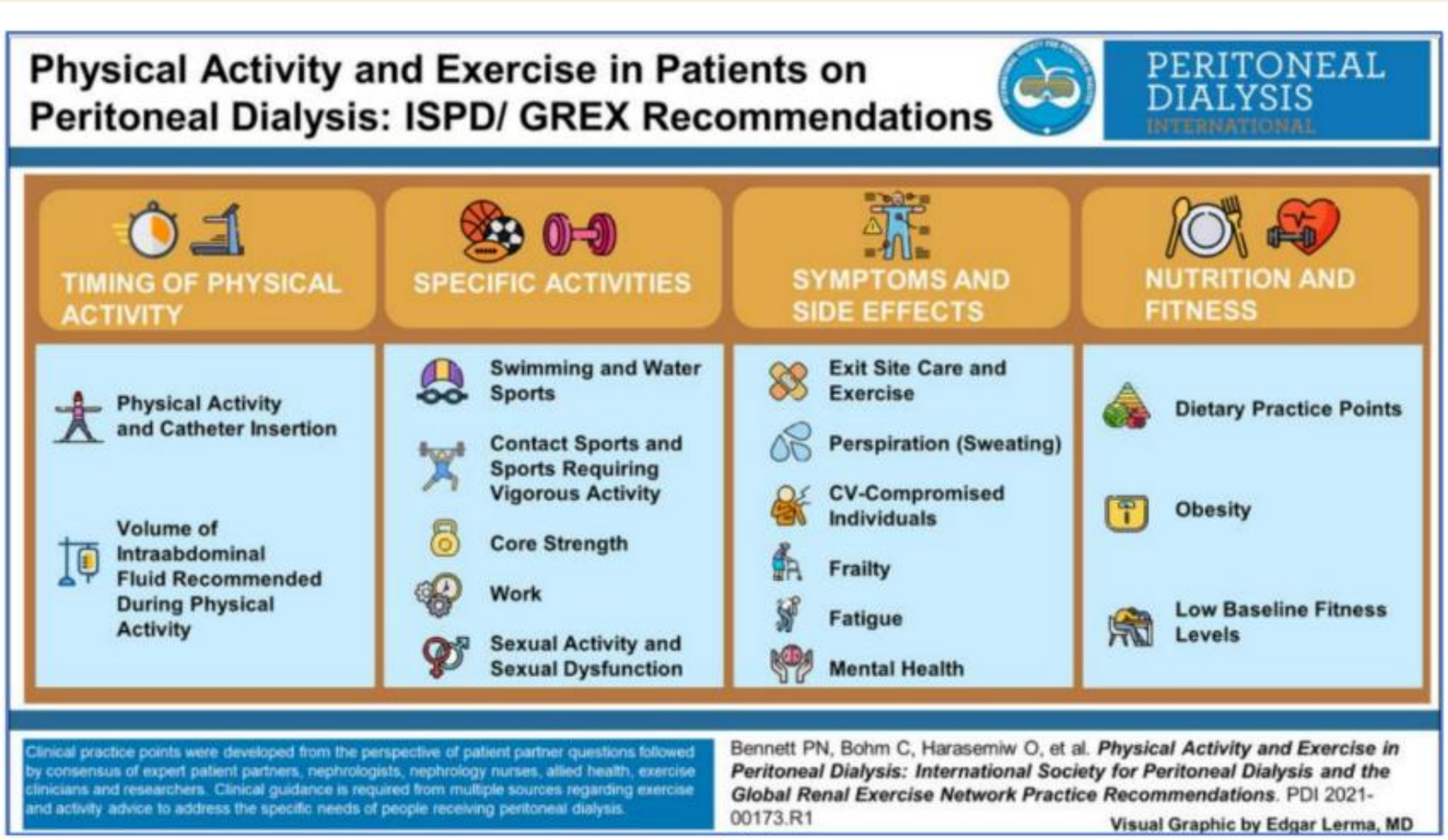
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What about the catheter?

- Exercising trunk musculature for peritoneal dialysis patients?
  - Appears to be safe but evidence inconclusive
- Swimming?
  - Guided by staff
- Ideally no fluid in abdominal cavity (i.e. dry)

Guidelines



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Is it safe?

Tarca et al. (2020)

Exercise for people receiving peritoneal dialysis - review

32 **Adverse Events Reported from 16 trials**

- **15** **Muscle/Joint Injury or Pain**
- **6** **Fatigue**
- **4** **Short of Breath**
- **3** **Low Blood Pressure / Chest Pain**

Typical Responses

No serious events or dialysis-specific

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Is it safe?

Tarca et al. (2024)

Exercise for people receiving peritoneal dialysis - survey

52 **Participants reported an Adverse Event/s**

58% **Muscle/Joint Injury or Pain**

54% **Fatigue**

43% **Dizzy**



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Is it safe?

Tarca et al. (2024)

Exercise for people receiving peritoneal dialysis - survey

1. **Likely safe with risk low**
2. **Typical responses**
3. **Should be included in routine care**

82% **of Adverse Events occur Occasional or Rarely**

80% **of Adverse Events Occasionally or do not Affect Participation**

73% **of Adverse Events were Self-managed or Not Requiring Treatment**

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Your turn: In the role of your patient……

Chair Hold



Got a barrier? Tell us…

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Your turn: In the role of your patient……

Seated March



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Your turn: In the role of your patient……

Straight Rows



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Kidney Transplant



USA – Prehab for Transplant Improves Physical Function

McAdams DeMarco et al. (2018)

- Diaphragmatic breathing exercises,
- Stretching
- Strengthening muscle tone with and without therabands
- Swiss ball exercises
- Trampoline exercises
- Strength training exercises using weights
- Aerobic exercise



No adverse events

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Spain – Prehab for Transplant Improves Capacity and Strength

Perez-Saez et al. (2025)

- 3 sessions/week x 1-hr x 8-wks
- General strength and cardiovascular conditioning

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Post-Tx – Exercise Improves Heart, Lung and Muscle Function

Wilkinson et al. (2021)



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Is it safe?

Wilkinson et al. (2021)

0

Adverse Events Reported from 3 trials

11

Studies didn’t report

15.4%

Of participants were hospitalised compared to 40% in control group (O’Connor et al. 2017)



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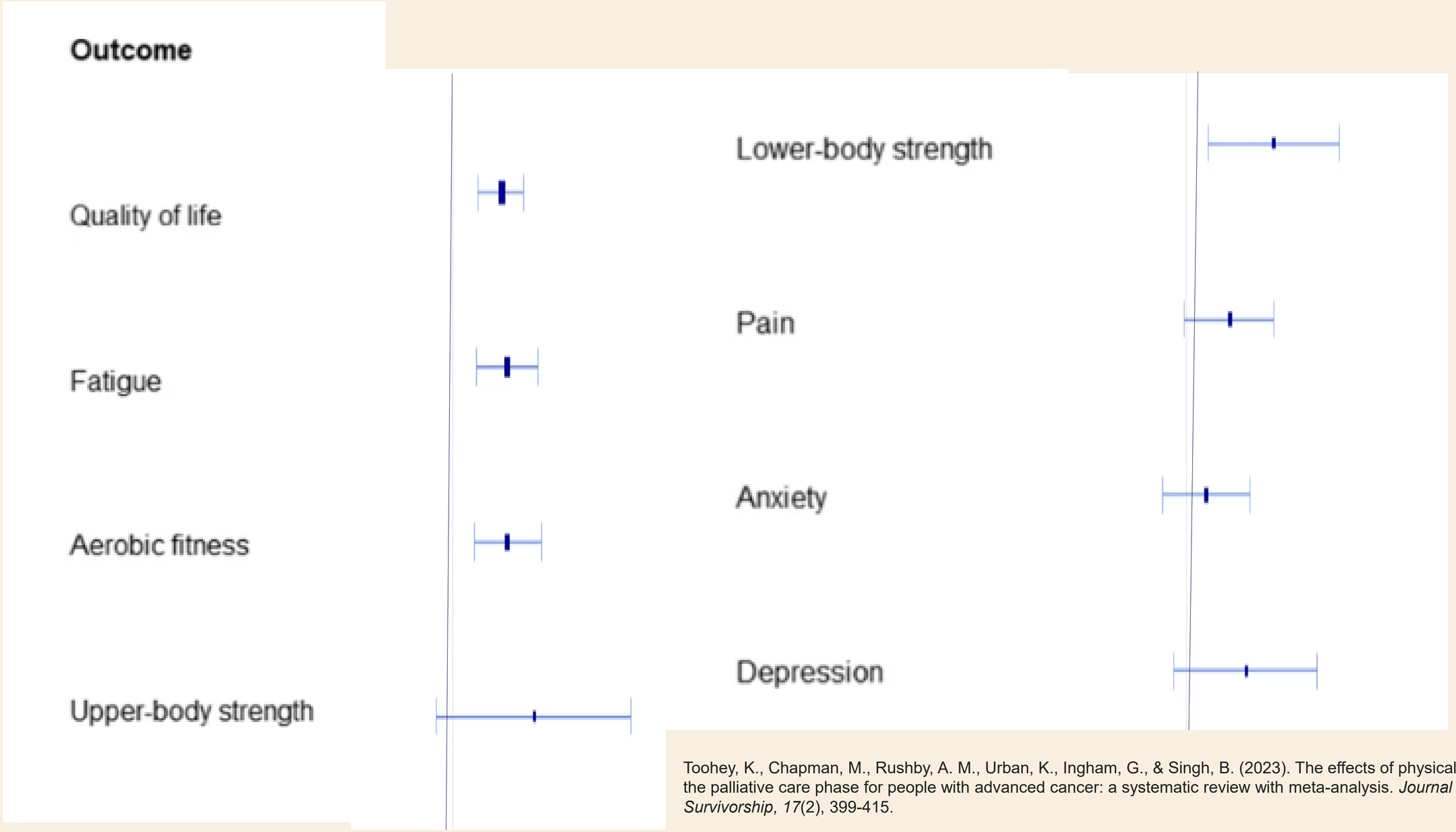
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Supportive Care



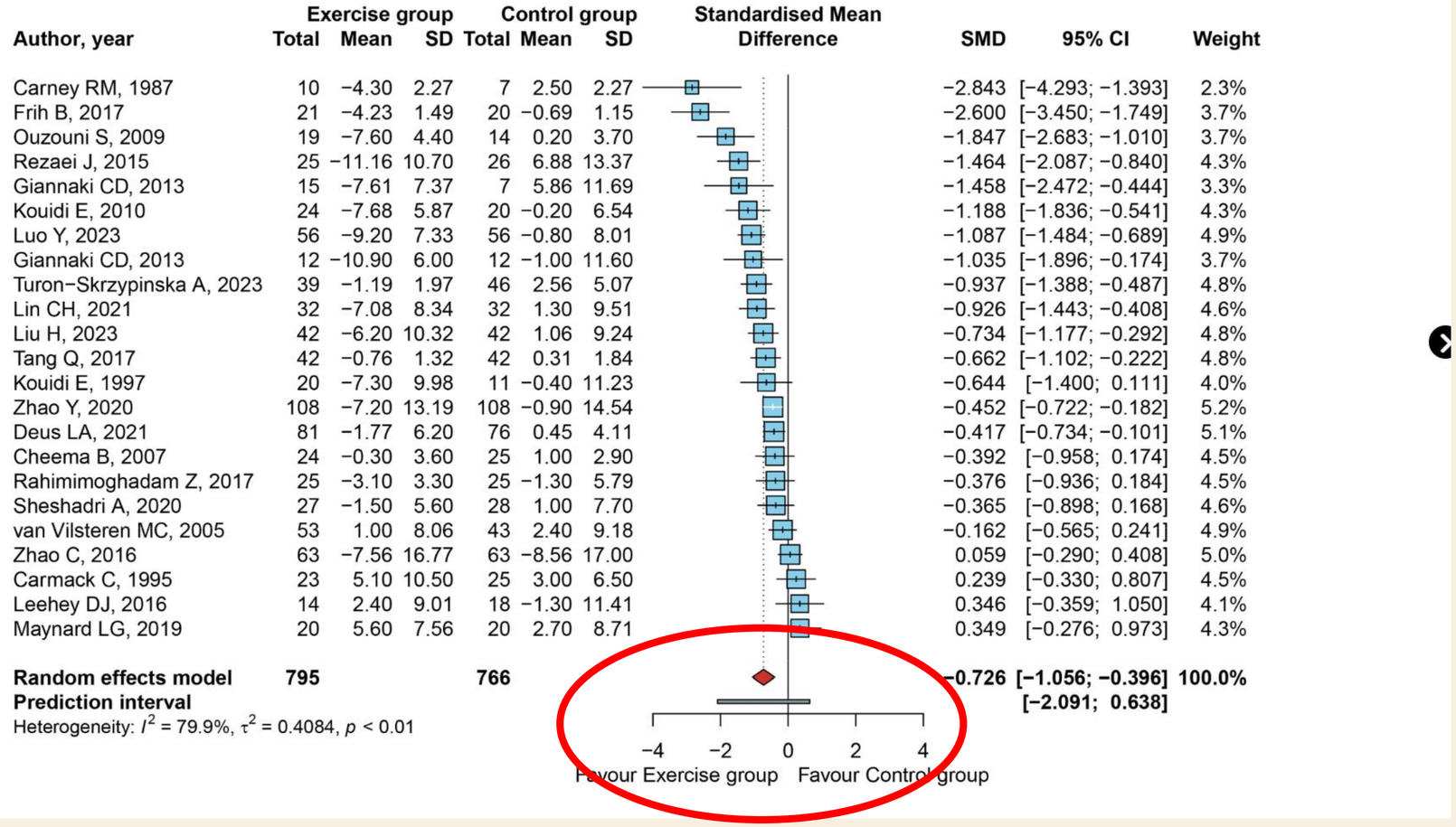
Effects of Exercise in Cancer Palliative Care



Toohey, K., Chapman, M., Rushby, A. M., Urban, K., Ingham, G., & Singh, B. (2023). The effects of physical exercise in the palliative care phase for people with advanced cancer: a systematic review with meta-analysis. *Journal of Cancer Survivorship*, *17*(2), 399-415.

CKD Symptoms in Supportive Care – Depression

Figure 2. Forest plot of SMD (95% CI) showing the effectiveness of exercise intervention on depression symptoms.



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Bringing it Together

In the role of your patient……

After seeing/trying these exercises, have we overcome your patients' barriers?

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How much?

Prioritise Physical Activity over Exercise

Movement the key, not bothered how, just do it!!

Physical Activity

- Consistency important BUT do when it feels right!

Sedentary Time

- Limiting Sedentary Bouts

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How much?

Aerobic Training x 4-5/wk

- Walking, cycling, swimming etc.

Strength Training (including balance) x 2/wk

- 1-3 sets
- 10-15 reps

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How hard?

Ensuring the Exercise/Activity is Adequate

Self-perceived effort and heart rate useful regulators

Rating of Perceived Exertion Scales

- Aiming for 6/10

Heart Rate

- Aiming for 60% estimated heart rate maximum

  (207- [age in years x 0.7]) *0.6

  (220 – [your age in years]) *0.6





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If you only have 30 seconds…

- Tell the patient that you believe physical activity is important and would like to address any barriers at the next visit

- Follow this up to carve out at least 2 minutes for addressing physical activity at that visit



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If you have 5 minutes…

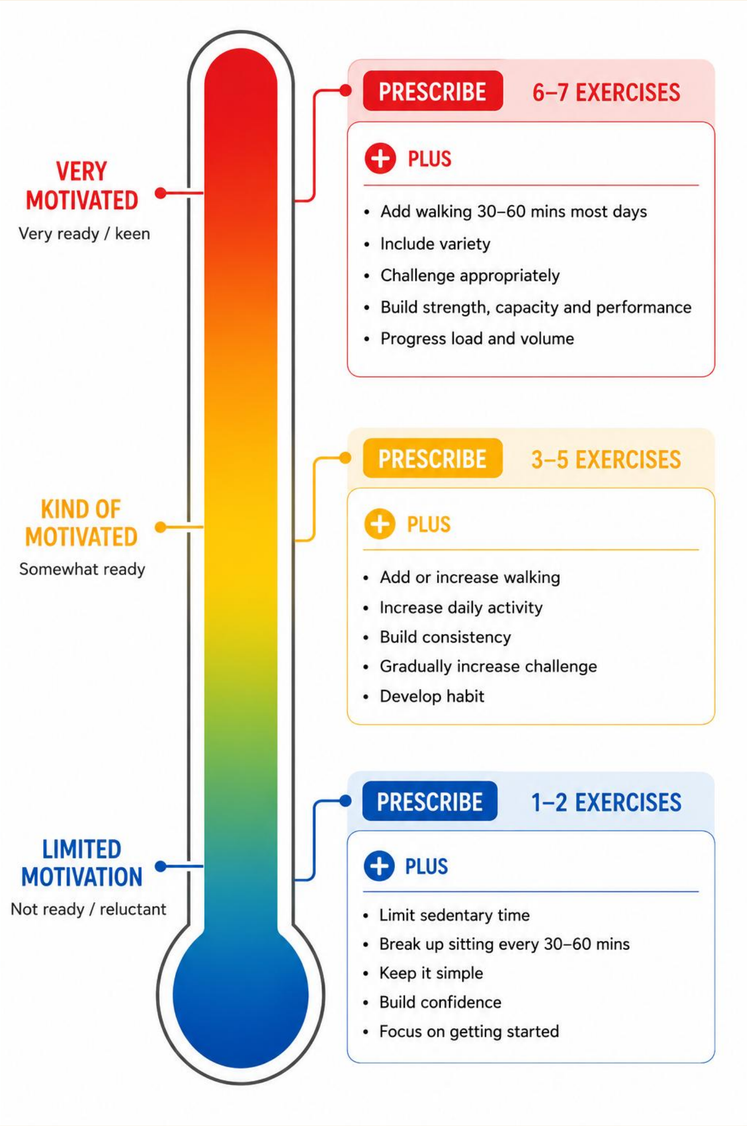
- Choose one lifestyle area of concern that patient is ready to address – ask them for their activity preference
- Ask the patient about what specific steps he/she could do
- Develop a brief action plan—one small step
- Check patient's confidence level
- If patient is not ready for an action plan, offer a brief message appropriate to the patient's stage of readiness



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Exercise Management Plan for YOU

- Reflect on you as a kidney patient and what you may have learnt today.
- Review your worksheet regarding the patient that you have chosen
- Find the Worksheet titled “Exercise Management Plan”
- On the template provided develop a physical activity/exercise program plan
    - Think barriers or limitations
    - Think how receptive they are to implementing exercise



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Exercise Management Plan for YOU

What Should I Consider?

Goals:

□ Improve fitness □ Increase strength □ Improve balance □ Increase energy
□ Improve health □ Manage symptoms □ Maintain independence
□ Other: _____

Important Considerations / Barriers:

_____

_____

_____

Strategy to Overcome:

_____

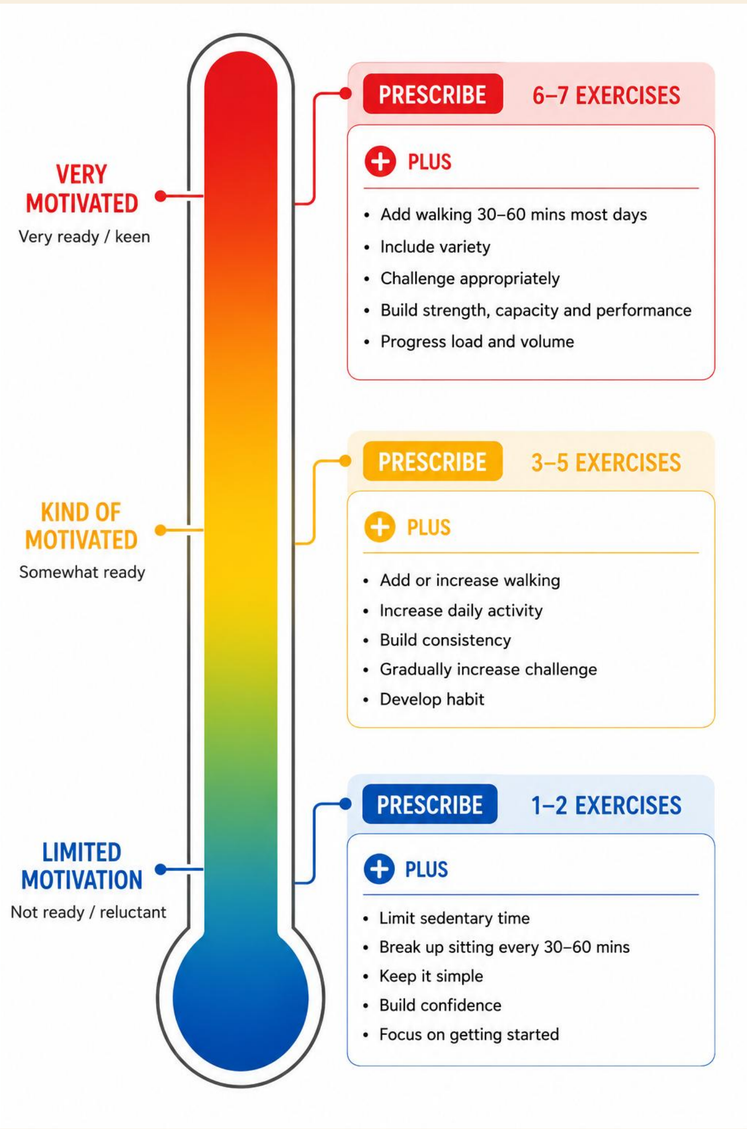
_____

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Reducing Sedentary Time

Sedentary Time Goal:

_____



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Exercise Management Plan for YOU

My Exercise Plan

Exercise	Sets	Repetitions / Time
1.		
2.		

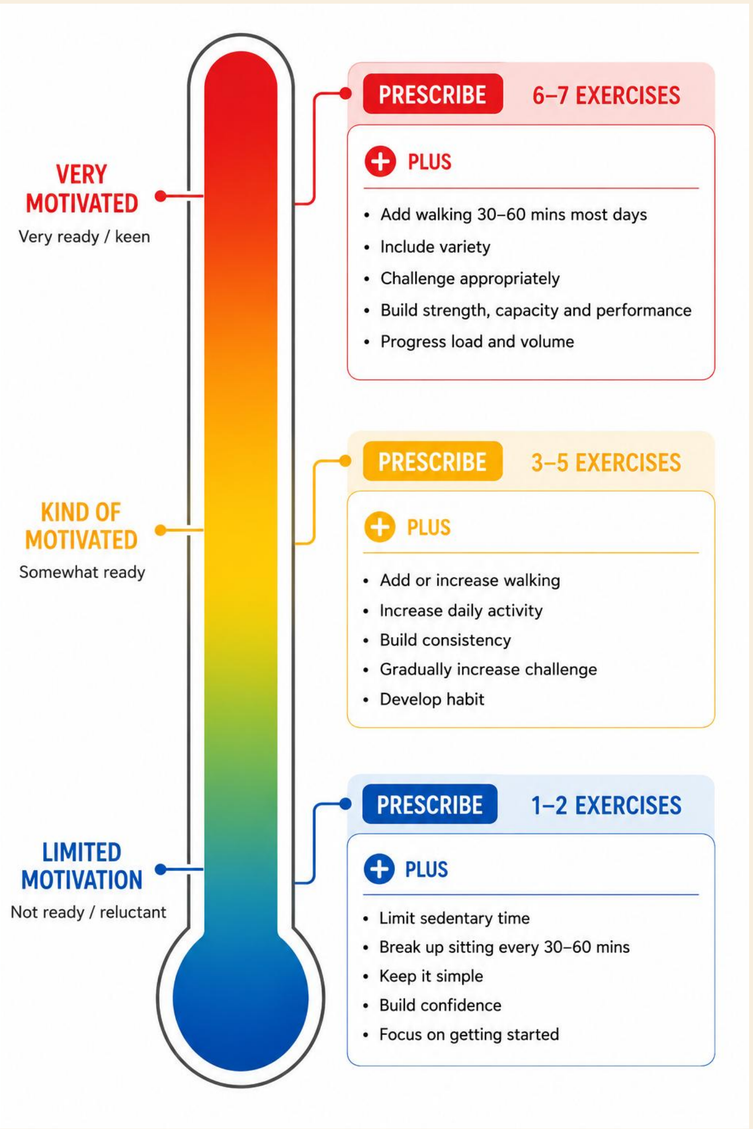
Weekly Exercise Frequency

Aerobic Exercise (Days/week): _____ Minutes/session: _____

Strength Exercise (Days/week): _____

Weekly Schedule

Day	Planned Activity
Monday	



Adelaide University

GREX Global Renal EXercise

Griffith UNIVERSITY











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GREX
Global Renal EXercise

Griffith UNIVERSITY

Take home messages from today?

People with kidney disease CAN exercise

99% of all people with CKD want to stay physically active

Starting and maintaining an exercise program requires many elements and support

A program can start with you…a champion kidney exercise clinician

A program can be enhanced with exercise professionals with your support

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Thank you ☺

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