DEPARTMENT OF ANAESTHESIA & PERIOPERATIVE MEDICINE
UNIVERSITY OF CAPE TOWN

REHABILITATION FOR LONG-COVID

ROMY PARKER

BSC(PHYS)

BSC(MED)(HONS)EX.SCI(PHYS)

MSC (PAIN)

PHD(PSYCH)

PGDIP (HPE)

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AIMS OF THIS LECTURE

- Define the condition – Thank you Dr Perumal
- Review methods for assessing and reassessing symptoms
- Present rehabilitation strategies
  - Breathing rehab
  - Sleep hygiene
  - Mindfulness
  - Activity scheduling (pacing)
  - Goal setting and Exercise

ASSESSING AND REASSESSING

HOW TO MONITOR IMPROVEMENT

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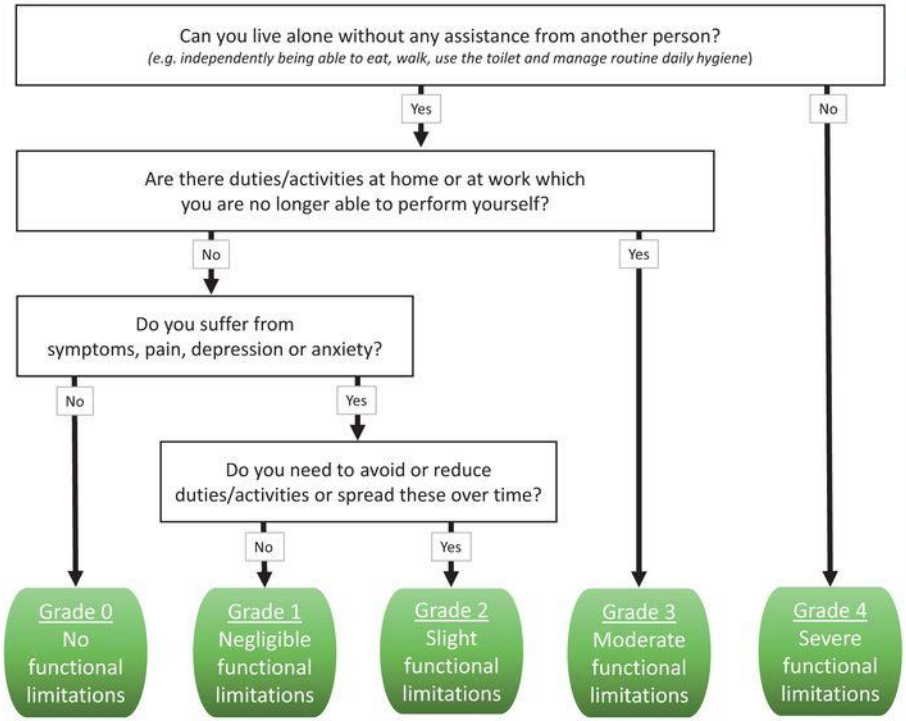
ASSESSMENT AND REASSESSMENT

- Post-COVID-19 functional status scale (PCFS)
  - Covers changes in lifestyle, sports and social activities
  - Status in the past week

Patient self-report methods for the Post-COVID-19 Functional Status (PCFS) Scale.

A



B

How much are you currently affected in your everyday life by COVID-19? Please indicate which one of the following statements applies to you most.	Corresponding PCFS scale grade
I have no limitations in my everyday life and no symptoms, pain, depression or anxiety related to the infection.	0
I have negligible limitations in my everyday life as I can perform all usual duties/activities, although I still have persistent symptoms, pain, depression or anxiety.	1
I suffer from limitations in my everyday life as I occasionally need to avoid or reduce usual duties/activities or need to spread these over time due to symptoms, pain, depression or anxiety. I am, however, able to perform all activities without any assistance.	2
I suffer from limitations in my everyday life as I am not able to perform all usual duties/activities due to symptoms, pain, depression or anxiety. I am, however, able to take care of myself without any assistance.	3
I suffer from severe limitations in my everyday life: I am not able to take care of myself and therefore I am dependent on nursing care and/or assistance from another person due to symptoms, pain, depression or anxiety.	4

F.A. Klok et al. Eur Respir J doi:10.1183/13993003.01494-2020

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ASSESSMENT AND REASSESSMENT

- Central Sensitisation Inventory
  - 25 questions evaluating a range of symptoms
  - Interpretation of scores
    - 0-29 subclinical
    - 30-39 mild
    - 40-49 moderate
    - 50-59 severe
    - 60-100 extreme

1. I feel tired and unrefreshed when I wake from sleeping.	Never	Rarely	Sometimes	Often	Always
2. My muscles feel stiff and achy.	Never	Rarely	Sometimes	Often	Always
3. I have anxiety attacks.	Never	Rarely	Sometimes	Often	Always
4. I grind or clench my teeth.	Never	Rarely	Sometimes	Often	Always
5. I have problems with diarrhea and/or constipation.	Never	Rarely	Sometimes	Often	Always
6. I need help in performing my daily activities.	Never	Rarely	Sometimes	Often	Always
7. I am sensitive to bright lights.	Never	Rarely	Sometimes	Often	Always
8. I get tired very easily when I am physically active.	Never	Rarely	Sometimes	Often	Always
9. I feel pain all over my body.	Never	Rarely	Sometimes	Often	Always
10. I have headaches.	Never	Rarely	Sometimes	Often	Always
11. I feel discomfort in my bladder and/or burning when I urinate.	Never	Rarely	Sometimes	Often	Always
12. I do not sleep well.	Never	Rarely	Sometimes	Often	Always
13. I have difficulty concentrating.	Never	Rarely	Sometimes	Often	Always
14. I have skin problems such as dryness, itchiness, or rashes.	Never	Rarely	Sometimes	Often	Always
15. Stress makes my physical symptoms get worse.	Never	Rarely	Sometimes	Often	Always
16. I feel sad or depressed.	Never	Rarely	Sometimes	Often	Always
17. I have low energy.	Never	Rarely	Sometimes	Often	Always
18. I have muscle tension in my neck and shoulders.	Never	Rarely	Sometimes	Often	Always
19. I have pain in my jaw.	Never	Rarely	Sometimes	Often	Always
20. Certain smells, such as perfumes, make me feel dizzy and nauseated.	Never	Rarely	Sometimes	Often	Always
21. I have to urinate frequently.	Never	Rarely	Sometimes	Often	Always
22. My legs feel uncomfortable and restless when I am trying to go to sleep at night.	Never	Rarely	Sometimes	Often	Always
23. I have difficulty remembering things.	Never	Rarely	Sometimes	Often	Always
24. I suffered trauma as a child.	Never	Rarely	Sometimes	Often	Always
25. I have pain in my pelvic area.	Never	Rarely	Sometimes	Often	Always
Total Each Column					

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ASSESSMENT AND REASSESSMENT

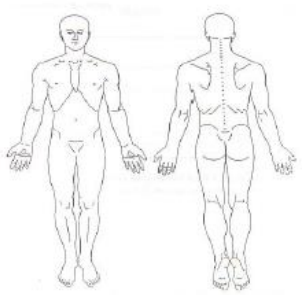
- If pain is a significant feature assess it thoroughly
- Brief Pain Inventory
  - Pain Severity Score
  - Pain Interference Score

BRIEF PAIN INVENTORY

1. Throughout our lives, most of us have had pain from time to time (such as minor headaches, sprains, and toothaches). Have you had pain other than these everyday kinds of pain during the last week?

Yes No

2. On the diagram, shade in the areas where you feel pain. Put an X on the area that hurts the most.



3. Please rate your pain by circling the one number that best describes your pain at its *worst* in the last week.

0 1 2 3 4 5 6 7 8 9 10
No Pain — Pain as bad as you can imagine

4. Please rate your pain by circling the one number that best describes your pain at its *least* in the last week.

0 1 2 3 4 5 6 7 8 9 10
No Pain — Pain as bad as you can imagine

5. Please rate your pain by circling the one number that best describes your pain on the *average*.

0 1 2 3 4 5 6 7 8 9 10
No Pain — Pain as bad as you can imagine

6. Please rate your pain by circling the one number that tells how much pain you have *right now*.

0 1 2 3 4 5 6 7 8 9 10
No Pain — Pain as bad as you can imagine

7. What treatments or medications are you receiving for your pain?

_____

8. In the last week, how much *relief* have pain treatments or medications provided? Please circle the one percentage that most shows how much *relief* you have received.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
No Relief — Complete Relief

9. Circle the one number that describes how much, during the past week, pain has *interfered with* your:

A. *General Activity*

0 1 2 3 4 5 6 7 8 9 10
Does not interfere — Completely interferes

B. *Mood*

0 1 2 3 4 5 6 7 8 9 10
Does not interfere — Completely interferes

C. *Walking Ability*

0 1 2 3 4 5 6 7 8 9 10
Does not interfere — Completely interferes

D. *Normal Work* (includes both work outside the home and housework)

0 1 2 3 4 5 6 7 8 9 10
Does not interfere — Completely interferes

E. *Relations with other people*

0 1 2 3 4 5 6 7 8 9 10
Does not interfere — Completely interferes

F. *Sleep*

0 1 2 3 4 5 6 7 8 9 10
Does not interfere — Completely interferes

G. *Enjoyment of life*

0 1 2 3 4 5 6 7 8 9 10
Does not interfere — Completely interferes

Scoring:
Pain Severity Score = Mean of items 3–6 (pain at its worst, pain at its least, average
Pain Interference Score = Mean of items 9A–9G (interference of pain with: general activity, mood, walking, normal work, relations, sleep, enjoyment of life)

(Cleeland and Ryan 1994)

Cleeland, C. S. and K. M. Ryan (1994). "Pain assessment: global use of the Brief Pain Inventory." Ann Acad Med Singapore **23**(2): 129-38.

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ASSESSMENT AND REASSESSMENT

- ***Caution*** with full physical, functional or cognitive assessments
  - In other post-viral fatigue syndromes there are many case reports of patients becoming severely ill or experiencing "crashes" after these assessments.
  - Its not that they can't do them, its that they don't recover

REHABILITATION

BREATHING, SLEEP, MINDFULNESS STRATEGIES, ACTIVITY SCHEDULING AND PERSONALISED READJUSTMENT TO PHYSICAL ACTIVITY

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WHERE TO START

- Grade 1 and 2 – negligible and slight functional limitations
  - Symptom management
  - Activity scheduling
    - Personalise ReAdjustment to Activity (PRAA) embedded
- Grade 3 and 4 – moderate and severe functional limitations
  - Symptom management
  - Personalised ReAdjustment to Activity towards greater physical activity

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BREATHING REHAB

- Respiratory physiotherapy
  - Refer patients who continue to struggle with SOB at rest or on exertion, or feeling light-headed
  - Diaphragmatic breathing and other breathing training
  - Restore inspiration:expiration ratios (1:2)
  - First consult face to face (f2f) with telehealth follow ups possible.

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SLEEP

- Poor sleep, disturbed sleep, sleep apnoea are all reported
- May be linked to poor breathing patterns
- Screen for PTSD and refer if indicated
- Treatment with sleep hygiene initially
- Refer to sleep labs if persists after applying sleep hygiene principles for 6 weeks

MINDFULNESS OR RELAXATION

- Prolonged mental health symptoms may be directly related to covid-19 or related to the pandemic generally
  - Anxiety, panic attacks, memory issues, cognitive slowing (brain fog), depression
- Mild - Referral to physio and OT for mindfulness or relaxation training, activity scheduling and PRAA
- Moderate-severe – Referral to psychology

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ACTIVITY SCHEDULING

- Patients with Functional Limitations must start here i.e. Grade 4 and 5
- Break tasks into achievable components
  - A daily timetable is useful as a starting point
  - Short bouts of activity followed by longer bouts of rest (1:2 ratio)
  - Very slowly over time progress to a 1:1 ratio and then finally a 2:1 ratio

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REST IN ACTIVITY SCHEDULES

- Relaxation time is active rehabilitation not selfish activity
- Rest may need to be complete rest i.e. sleep
- Differences in quality of rest when resting and reading, resting listening to music, resting sitting, resting lying down, and sleeping
- Most beneficial rest is supine (POTS)

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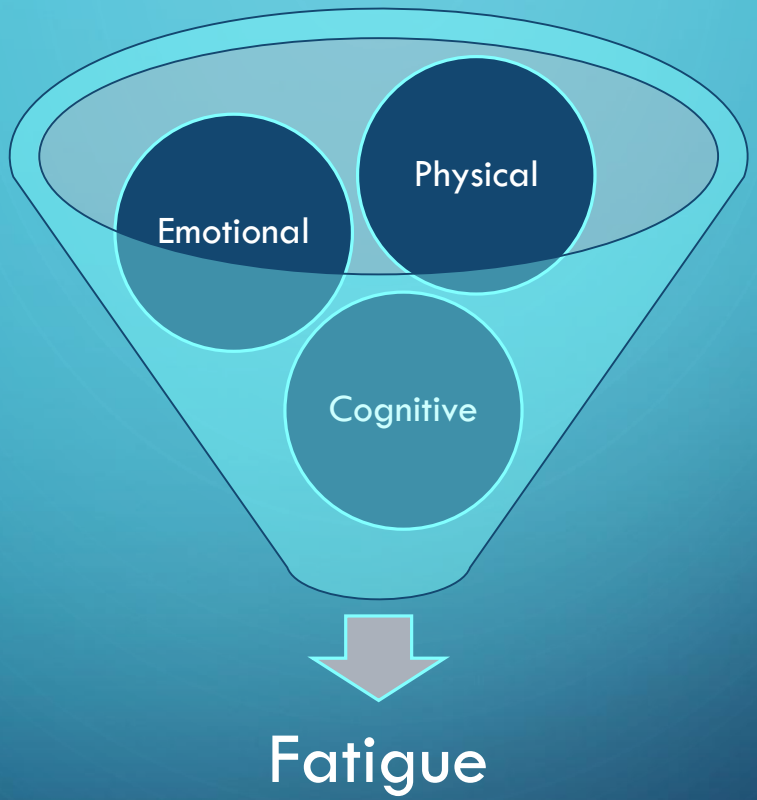
ACTIVITY SCHEDULES MUST HOLISTICALLY CONSIDER ENERGY EXPENDITURE



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PROGRESSING ACTIVITIES

- Initially, keep increasing rest until patient is stable
  - Fewer relapses and when they do relapse they are less severe
  - They will feel that they have better grasp of their condition and this will begin to reduce fear avoidance
- Then gradually increase activities and rest by 10% each.
- Start setting patient-centred meaningful goals from day 1

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CONFLICT ABOUT EXERCISE

- There are conflicting results for pacing and exercise for Chronic Fatigue Syndrome.
- Many of the early studies used a pacing strategy adapted from that used in CWP/FM in which the therapist decides on activity level and patients do the same every day whether it's a good day or a bad day (the PACE trial)
  - Exercise progressions occurred in a fixed fashion and rapidly
- Current guidelines are for a very careful personalised approach – Progressive RaAdjustment to Activity
  - Graded Exercise Therapy (GET) and CBT have been withdrawn as treatments for ME/CFS in the NICE guidelines

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PRINCIPLES FOR PRAA

- Rule out cardiac, psychological, respiratory, GIT, rheumatological causes
- Must be symptom free for 7 days
- Prepare for return to Physical Activity
  - Pacing/Activity Scheduling
  - Create a stable base

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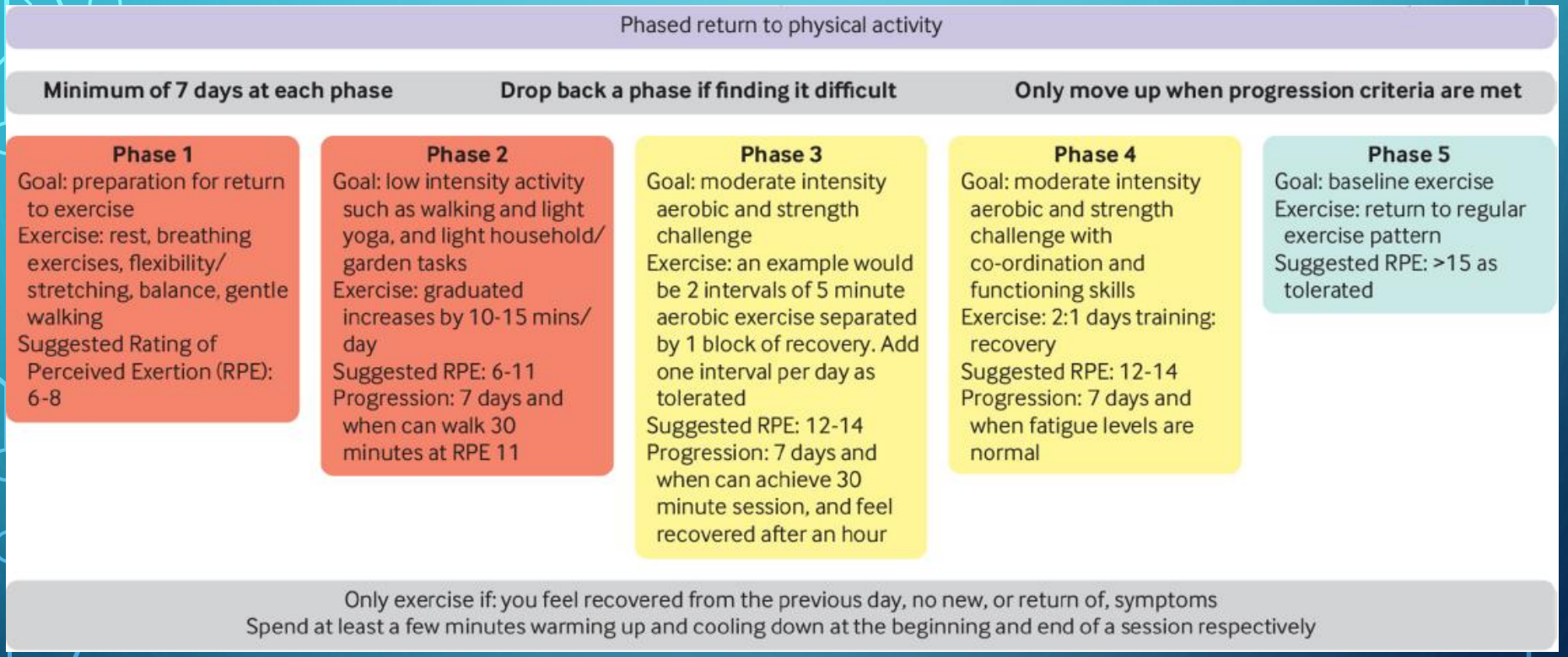
RETURNING TO PHYSICAL ACTIVITY



Salman, Vishnubala, le feuvre, Beane, Korgaonkar, Majeed & McGregor; 2021
BMJ 2021;372:m4721 http://dx.doi.org/10.1136/bmj.m4721

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PRINCIPLES OF PERSONALISED READJUSTMENT TO ACTIVITY

- Physical activity must be individually negotiated – fear of relapsing
- Consider physical exertion in all daily activities
- Consider – frequency, intensity, type, dosage and model for progression

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DOSAGE

- Frequency of Physical Activity:
  - Initially twice a week with minimum of 2 days rest
  - Progress to three times a week, alternate days
- Intensity:
  - Maximum intensity of 60% HR max
  - This might be achieved just getting up out of bed (Borg scale: “somewhat hard”)

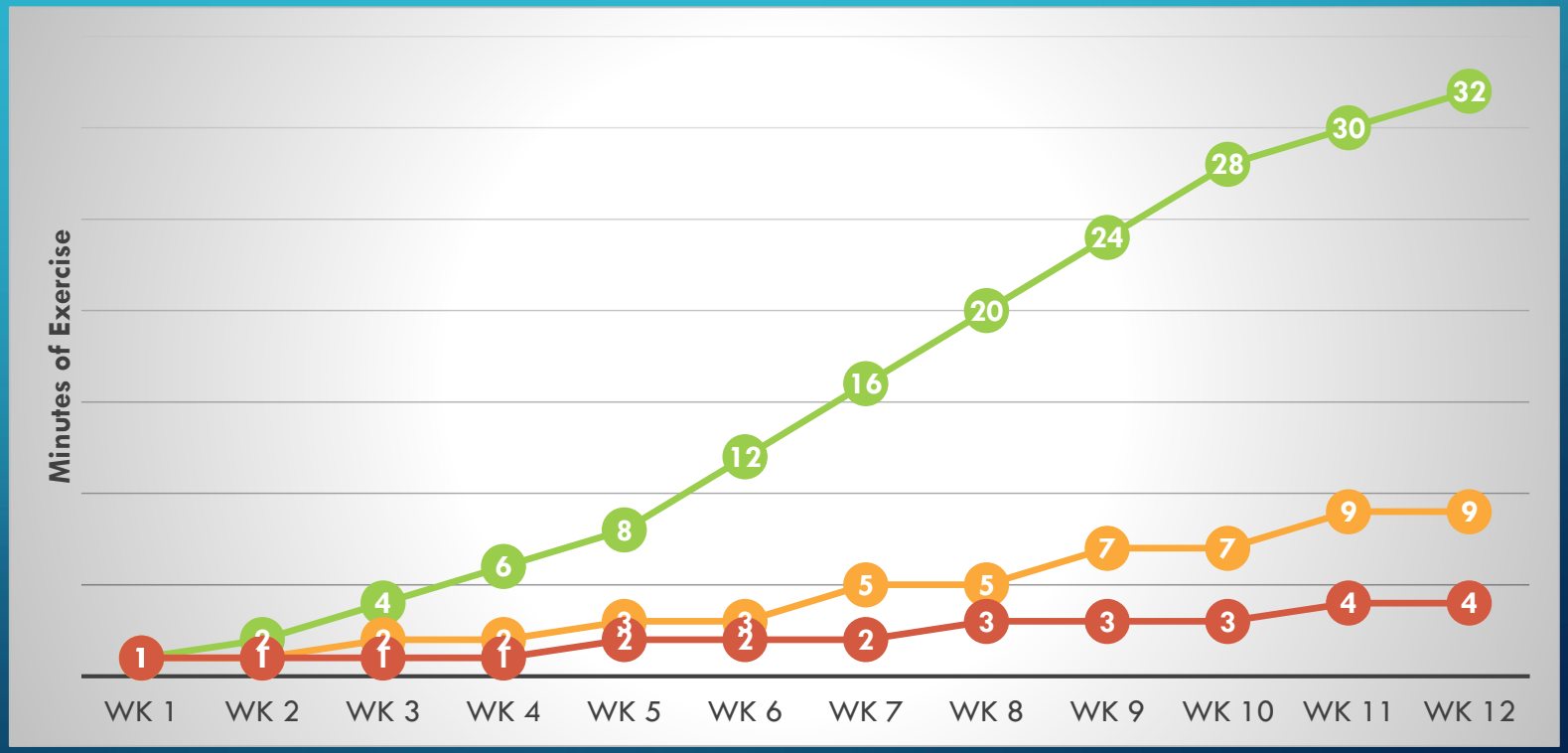
TYPE OF PHYSICAL ACTIVITY

- *Hydrotherapy*
- *Walking*
- *Any aerobic exercise or activity*
- *Consider energy cost of getting to venue*

PROGRESSION

- Personalised progression aiming for a plateau at each level
- Err on the side of caution
- Relapses or flare-ups may be delayed 48-72hrs after an increase
- Manage relapses by reverting to previous level and stabilising there (if necessary go back two levels)

PROGRESSING PHYSICAL ACTIVITY



THE CHALLENGES OF REHAB

- *The patient, therapist and support structures need to be very flexible*
- *Progress one area of function and participation at a time*

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FINDING REHAB PROFESSIONALS

- People working in the field of chronic pain management and COPD rehab will have the skills to manage these patients
- Clinician list at www.trainpainacademy.co.za

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USEFUL RESOURCES

- NICE COVID-19 rapid guideline: managing the long term effects of COVID-19 https://www.nice.org.uk/guidance/ng188
- Klok, et al *The Post-COVID-19 Functional Status (PCFS) Scale: a tool to measure functional status over time after COVID-19* European Respiratory Journal Jan 2020, 2001494; http://doi/10.1183/13993003.01494-2020
- Walitt & Bartrum 2021 *A clinical primer for the expected and potential post-COVID-19 syndromes* PAIN Reports 6; e887 http://dx.doi.org/10.1097/PR9.0000000000000887
- Kemp et al 2020 *Chronic pain after COVID-19: implications for rehabilitation* BJA https://doi.org/10.1016/j.bja.2020.05.021
- Greenhalgh et al 2020 *Management of post-acute covid-19 in primary care* BMJ 2020;370:m3026 http://dx.doi.org/10.1136/bmj.m3026
- Salman et al 2021 *Returning to physical activity after covid-19 BMJ 2021;372:m4721* http://dx.doi.org/10.1136/bmj.m4721

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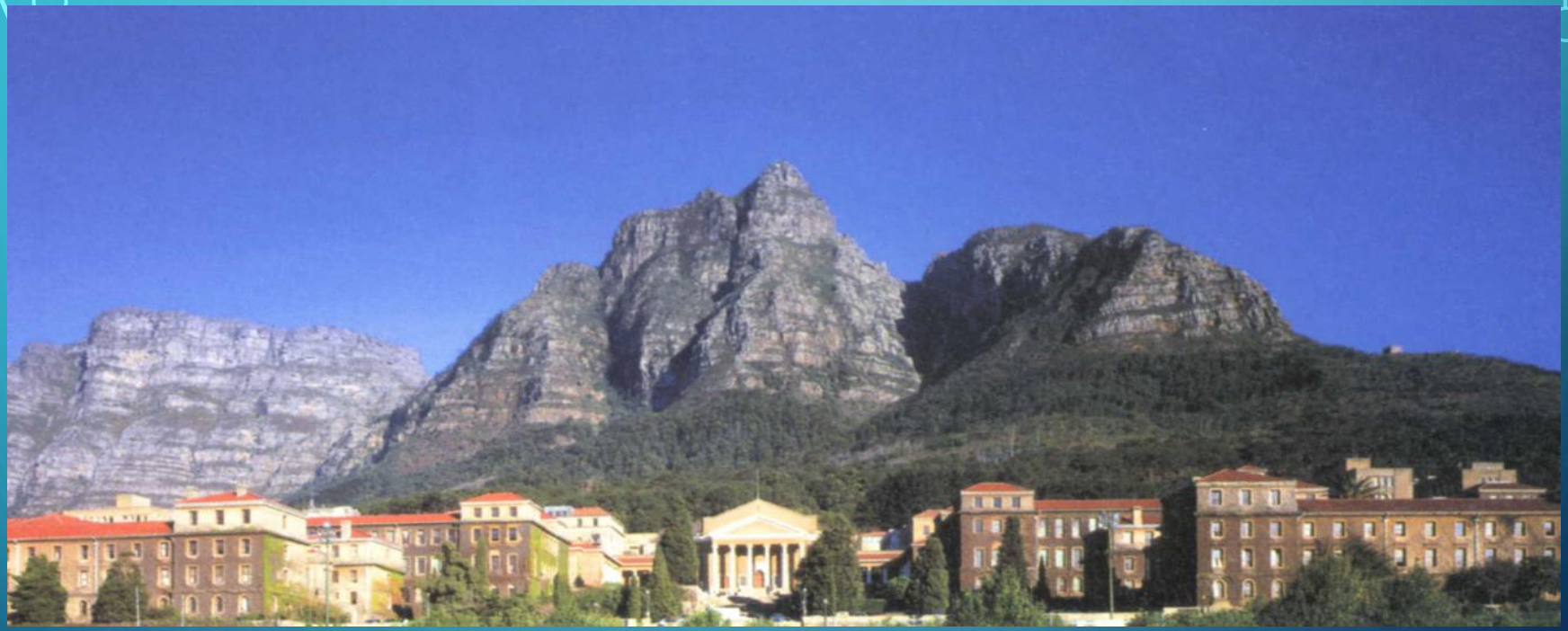
THANK YOU FOR YOUR ATTENTION



Romy.parker@uct.ac.za

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