

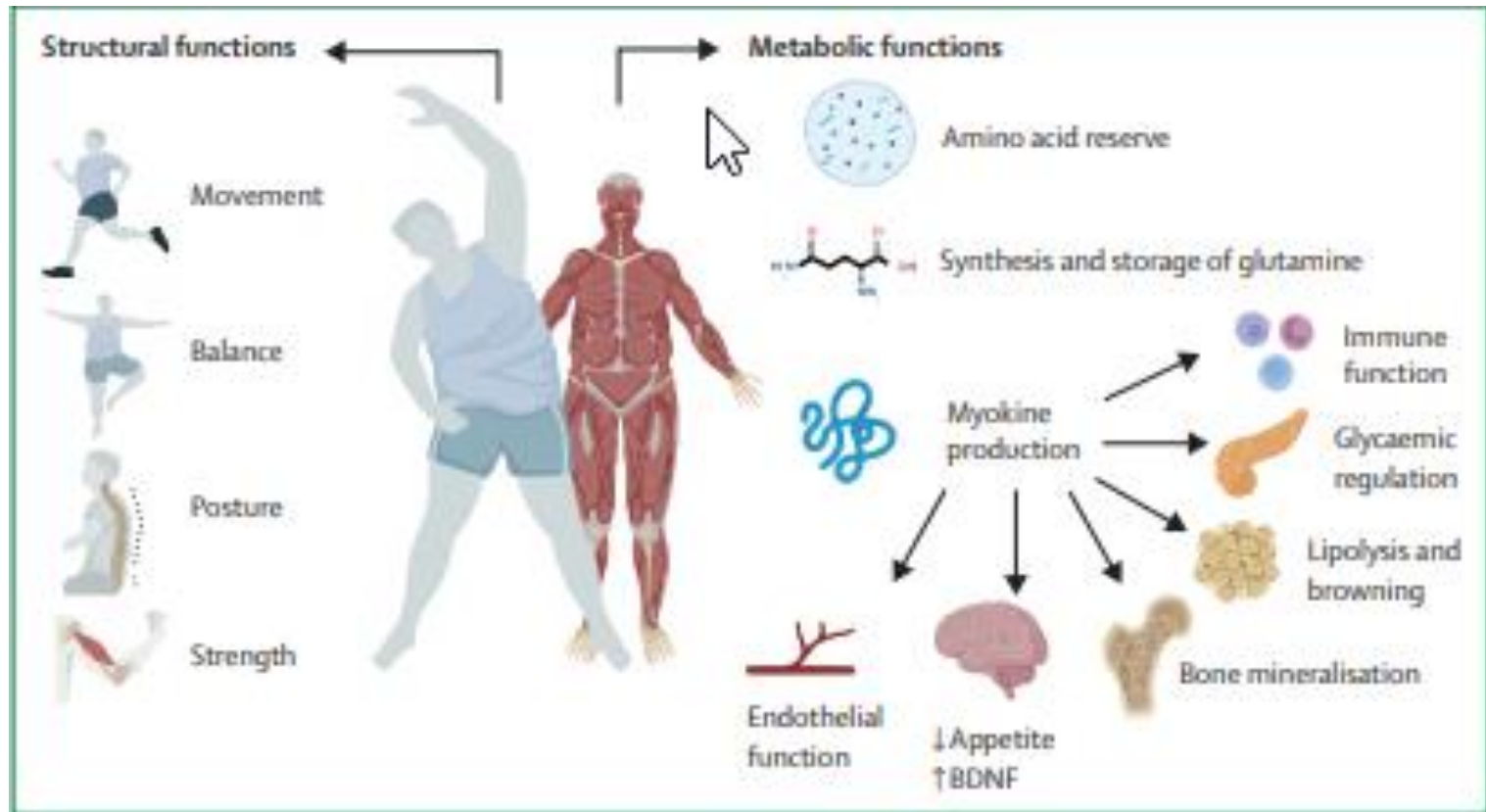
Physiotherapy, exercise and GLP-1s in the CKD population

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Content/Aims

1. Brief overview of muscle physiology
2. Sarcopenia in CKD
3. The effect of GLP-1s on muscle mass
4. Exercise benefits specific to the CKD population
5. The role of Physiotherapy when using GLP-1s
6. Considerations for patients with vascular access
7. Physical Outcome Measures

Firstly... What is the role of muscle?



So, when we lose muscle mass...

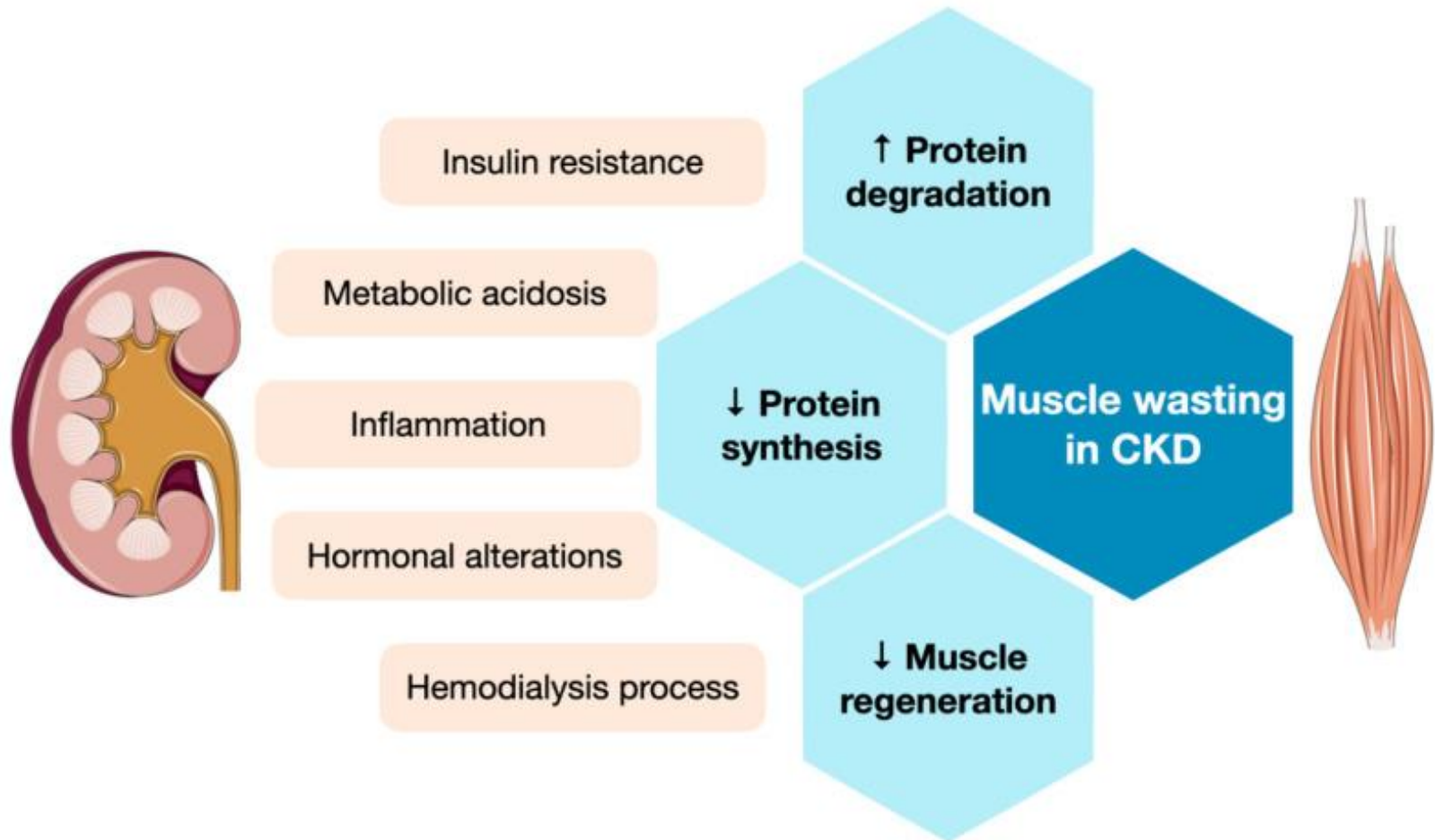
We lose strength → reduced mobility → increased falls risk → reduced independence → increased support with ADL's → increased frailty score → impacts quality of life

Impaired metabolic health, decreased immunity, increased risk of infections, delayed wound healing

...shorter survival?

It matters!

Muscle loss in CKD



Cheng et al, 2022

How GLP-1s changes body composition

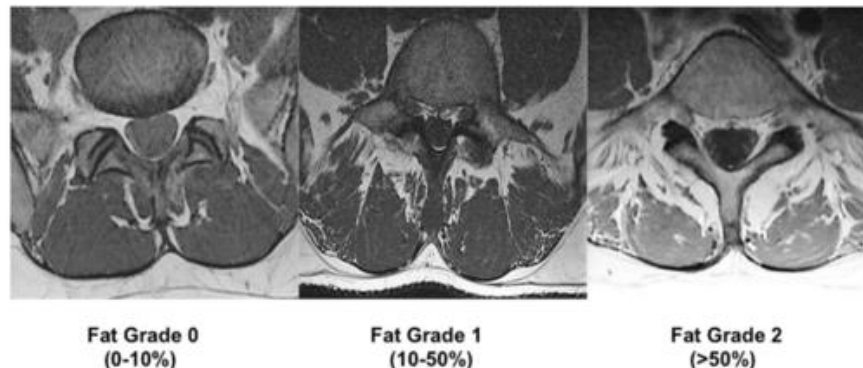
- GLP-1s drive significant fat loss of which 15-60% can be lean mass loss
- Muscle function is often preserved or improved

Potential risks with lean mass loss:

- Increase frailty, falls risk and dialysis intolerance
- GLP-1s reduce appetite and potential protein intake = less anabolic support on top of a baseline anabolic resistance

Reframing evidence – Adaptive vs Maladaptive muscle change

Maladaptive	Adaptive
Increase in sarcopenia if pre-existing	Reduction in intramuscular fat
Reduction in resting energy expenditure	Improvement in insulin sensitivity



The importance of exercise when on a GLP-1

- ❖ Exercise preserves lean mass and enhances metabolic benefits of GLP-1s
- ❖ Resistance exercise has direct impact on muscle quality and function
- ❖ Aerobic exercise improves mitochondrial and cardiovascular health

Lifestyle interventions that encourage increased physical activity concurrent with calorie restriction have been shown to sustain moderate weight loss

As well as the benefits in CKD!

Impact on
bone health
and
osteoporosis

Improves
fatigue and
sleep

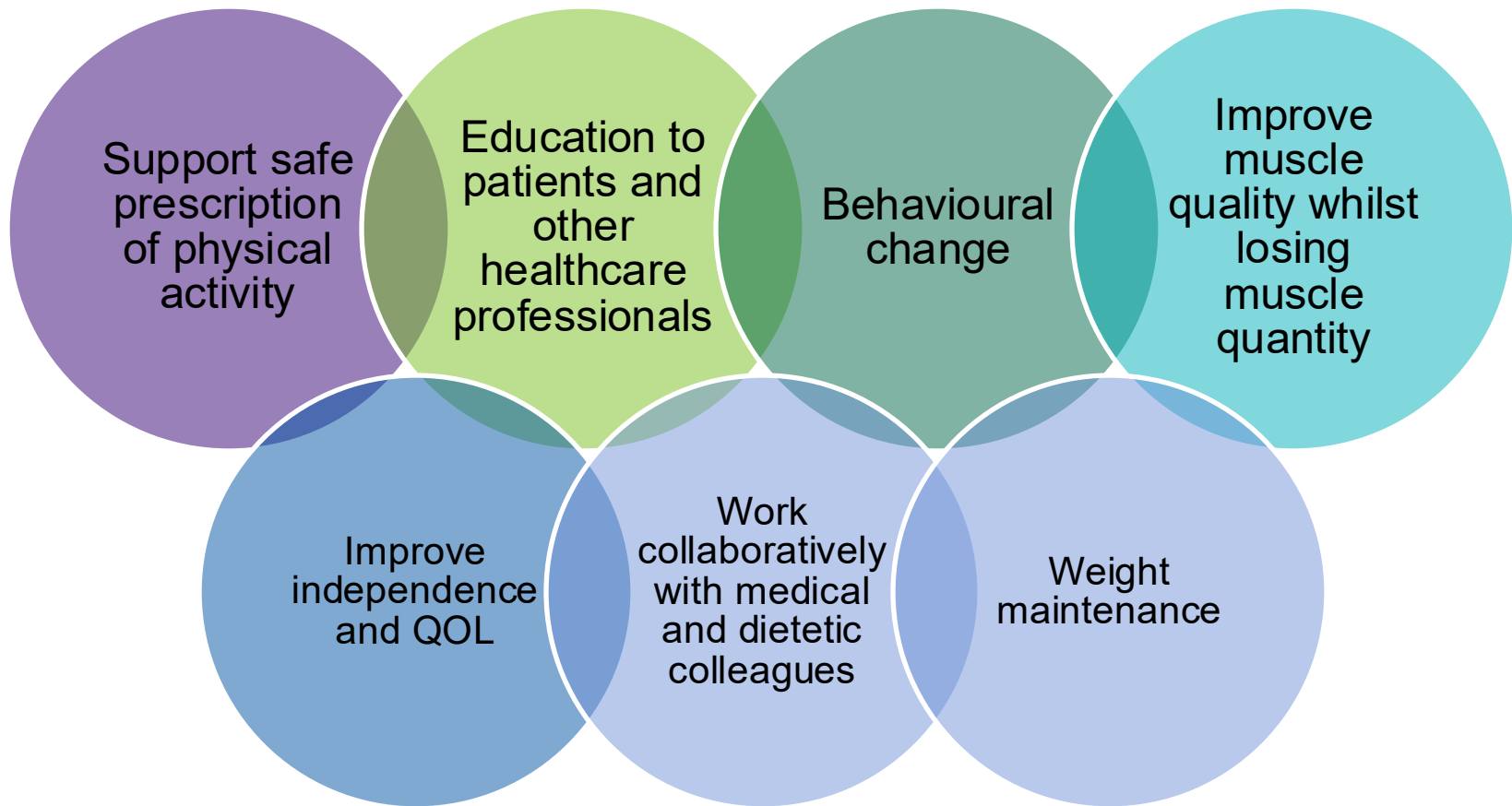
Boosts
cognitive
function and
memory

Improves
health-related
quality of life

world class expertise  local care

NHS
Royal Free London
NHS Foundation Trust

The role of the physio?

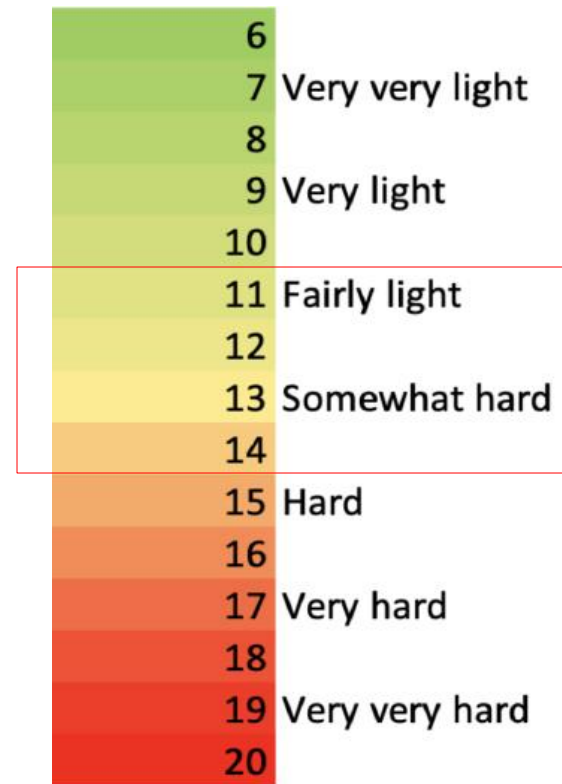


What exercise should they do?

150mins/week of moderate intensity cardio

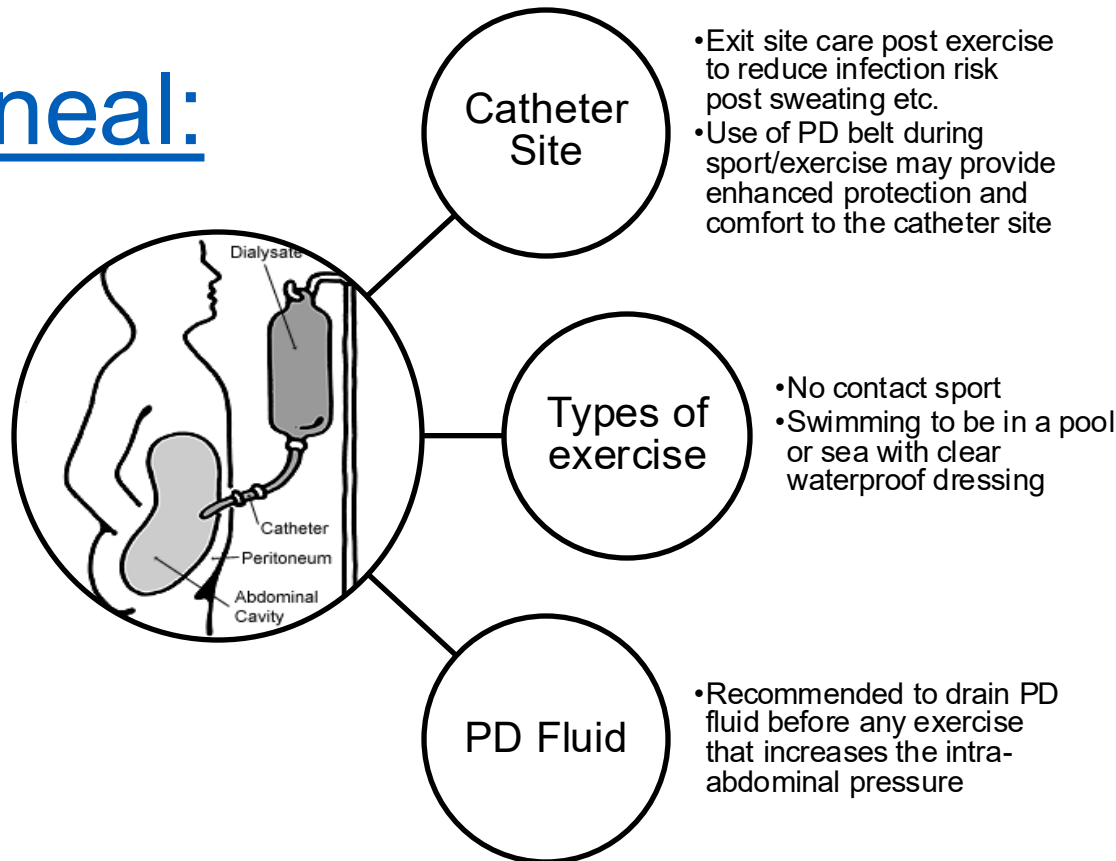


Muscle-strengthening exercises – at least 2x/week



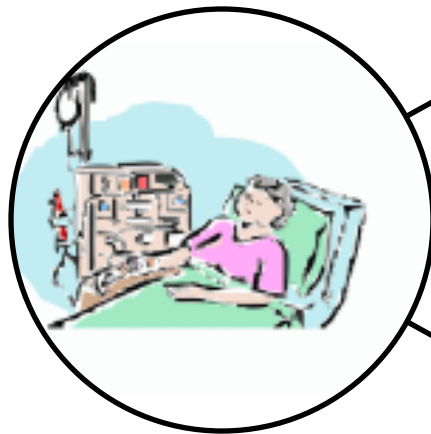
Does having vascular access change this?

Peritoneal:



Does having vascular access change this?

Haemodialysis:



Fistula

- First 6 weeks: No UL exercises, focus on isometric exercises
- Mature fistula: No specific guidelines – avoid heavy lifting

Line

- No swimming or contact sports
- Avoid repetitive arm movements that stretch/twist at the entry site

How can we measure any of this?

Sit to stand

- Different versions – 30sec, 5x, 1min
- Measures functional strength

Grip Strength

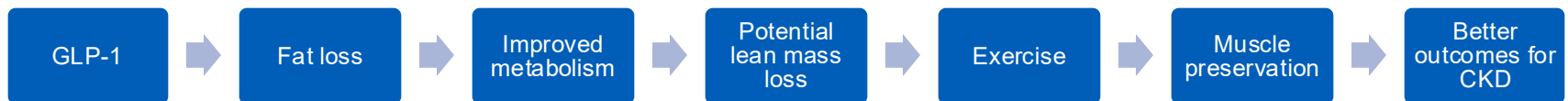
- Indicator for muscle mass and sarcopenia
- Some evidence to support calf diameter

Fitness Measures

- 6minute walk test, Timed-up-and-Go
- Relating to surgery – DASI, Ramp Test

Take-home messages!

1. Embed exercise prescription into MDT reviews
2. GLP-1s have muscle loss risks – exercise helps counteract this
3. Tailored exercise is safe and beneficial in all CKD stages
4. In a weight loss program – monitor functional outcomes, not just weight
5. Collaborative care is essential



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