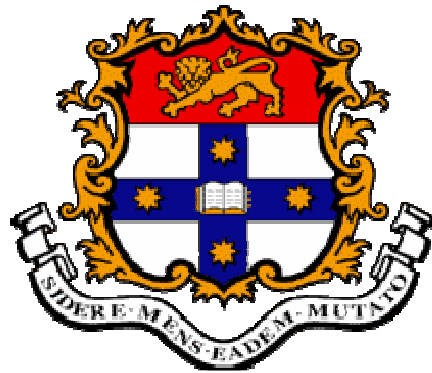
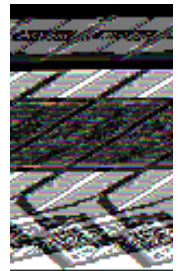


Land vs water-based exercise following total knee replacement

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SYDNEY SOUTH WEST
AREA HEALTH SERVICE
NSW HEALTH



Aim

To compare the effectiveness of land and water-based physiotherapy rehabilitation after primary TKR

Background: rationale for rehabilitation



Proposed rationale for water and land

	Water	Land
Constant Resistance	√	
↓ Mobility Aid use	√	
↓ WB through affected joint (less pain)	√	
↑ Walking speed	√	
↓ Oedema	√	
↑ Speed ↑↓ stairs	√	
↑ Self-reported functional ability	√	
↑ Strength		√
↑ Knee range of motion	√	√



Background

Nature and extent of the problem

- Rehabilitation & outcome measures vary between providers due to:
 - Lack of research identifying optimal treatment
 - Differences in resources

- Affects > 27,000 TKR patients per year



Strategic importance

- Lack of evidence supporting particular rehabilitation models is a concern for all stakeholders
 - For consumer – rehabilitation is a ‘lottery’
 - For physiotherapeutic rehabilitation providers -
 - Difficult to benchmark if rehabilitation varies between providers
 - Small departments (staff numbers) with high volume of patients = need to be efficient and cost-effective for sustainability



Strategic importance

- Policy makers – difficult to justify costs of rehab if not supported by evidence
- Thus, currently, we are not being “smart” in our service delivery



Planning and implementing solutions

- Design of intervention – relevant to Fairfield and ‘generalisable’
 - Mode of rehabilitation – land and water offered already
 - Group therapy offered already
 - Duration – 6 weeks is typical
 - Single-blind randomised trial is considered a robust research design
 - Few exclusion criteria
- Programme was informed by traditional exercise prescription guidelines and knowledge of current practice



Weeks
(post surgery)

102 Participants

Water

Land

2

Assessment: ROM
WOMAC
6-min Walk Test

Assessment: ROM
WOMAC
6-min Walk Test

12 sessions

(2x / wk)

12 sessions

(2x / wk)

8

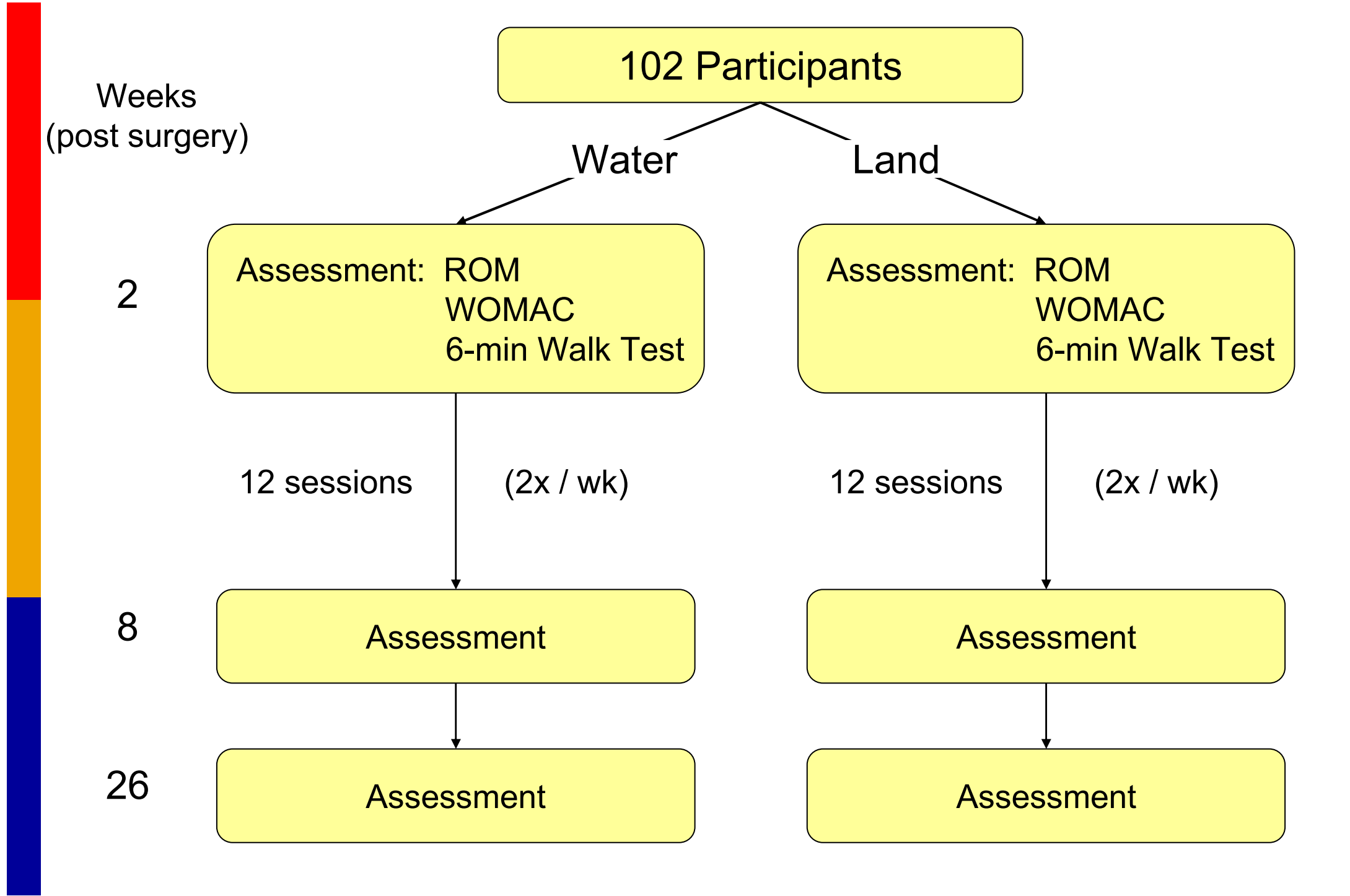
Assessment

Assessment

26

Assessment

Assessment

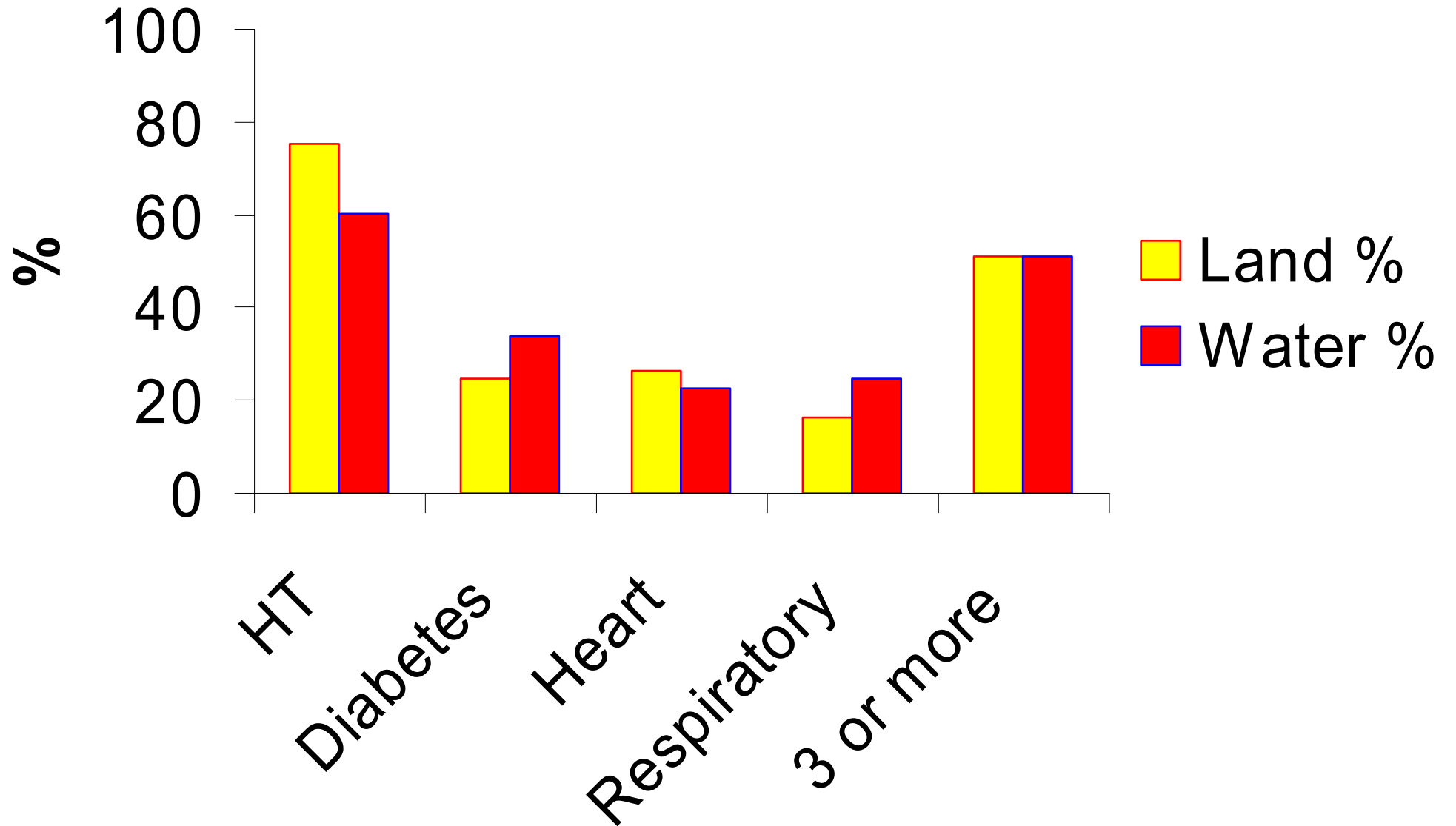


Outcomes and evaluation

Demographics

	N	Age yrs (mean)	Female (%)	BMI (mean)	BMI>30 (%)
Land	49	67.8	57	30.4	48
Water	53	68.7	57	31.8	55

Co-morbidities





Drop-outs (3)

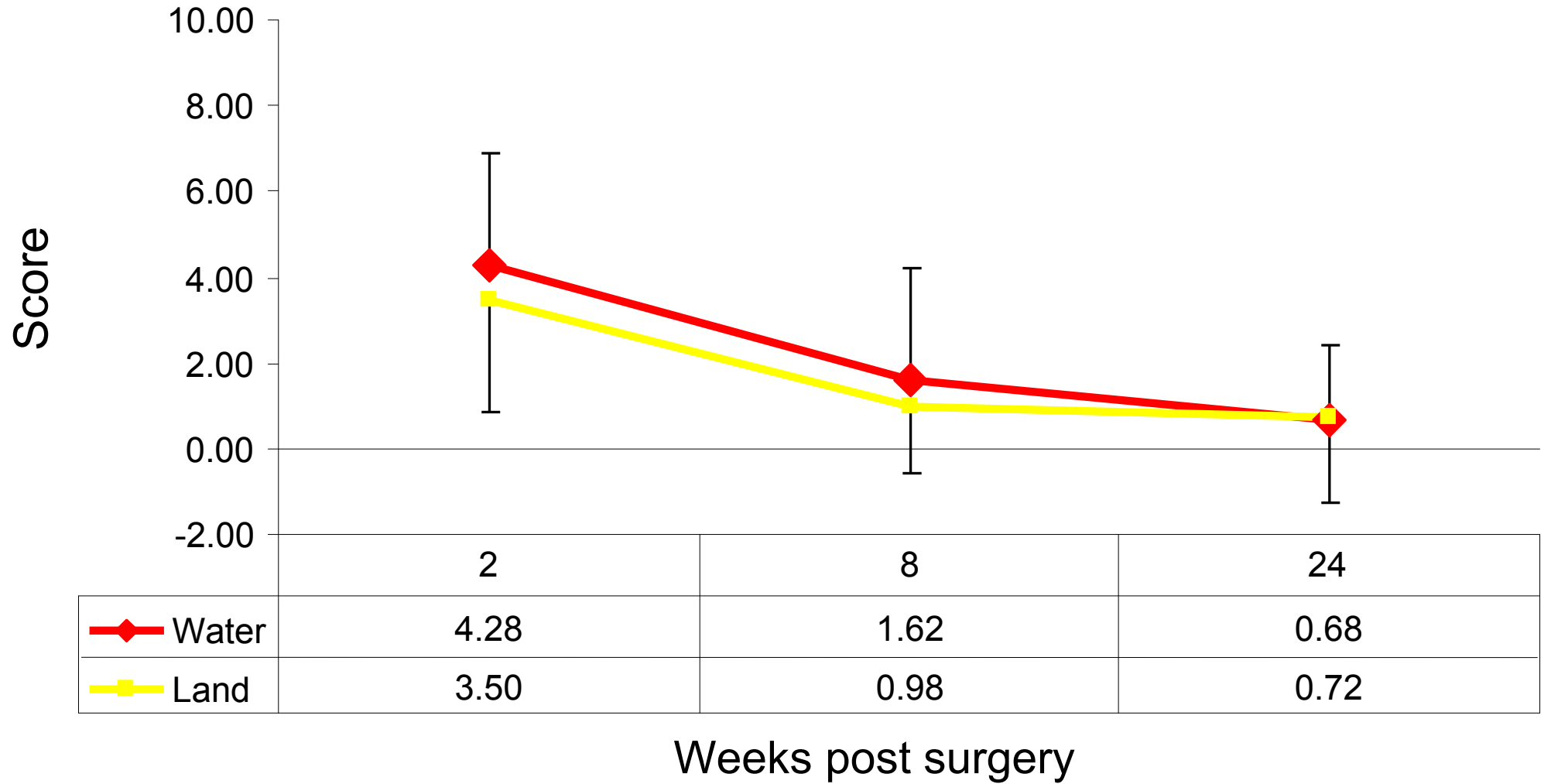
Water

- One participant
 - Death

Land

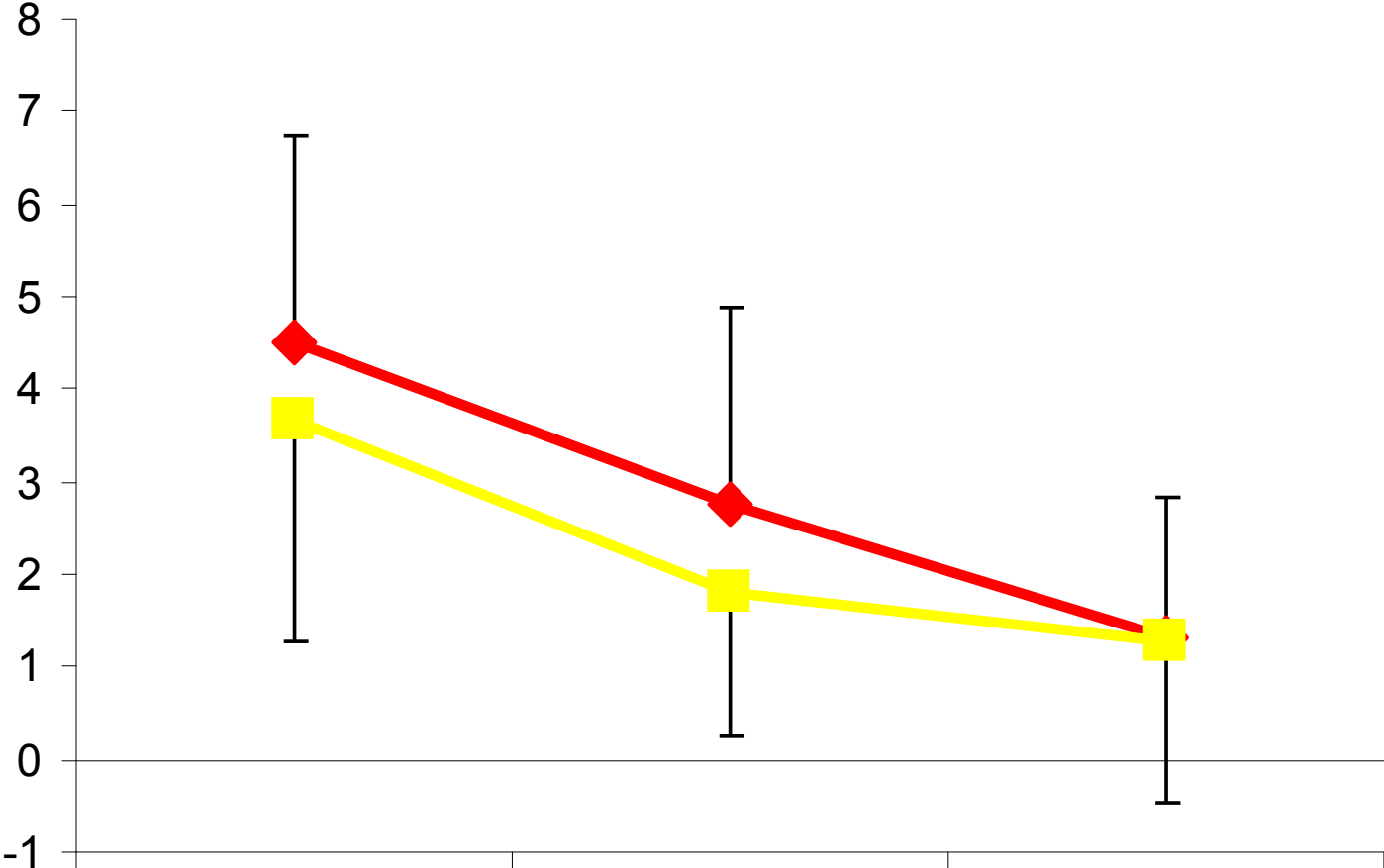
- Two participants
 - Infection: prolonged hospitalisation
 - Moved to rural NSW (post 8 wk Ax)

Visual analogue scale (Pain)



Oedema

Difference b/w operated and
Un-operated knees (cm)

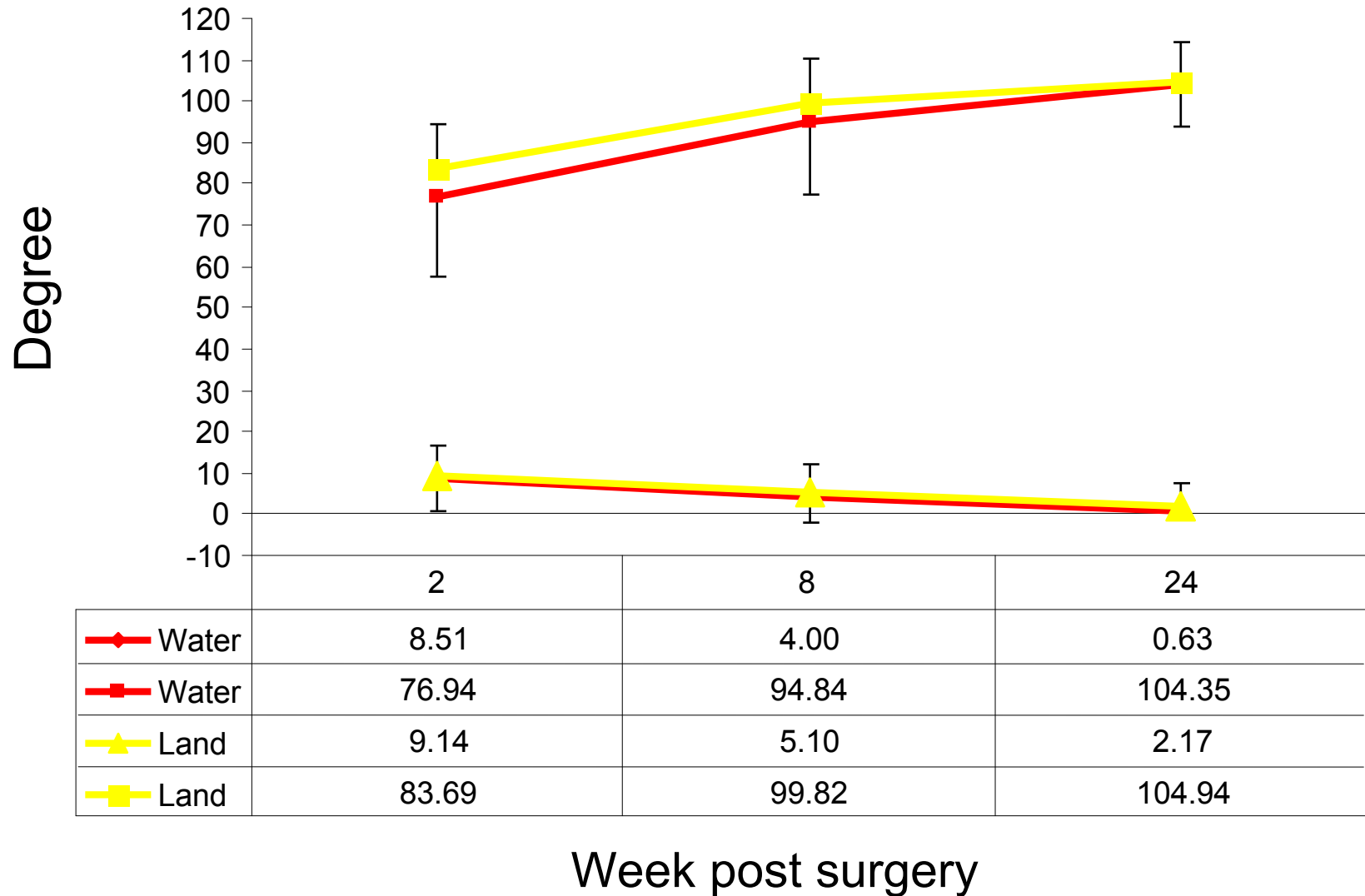


	2	8	26
Water	4.51509434	2.752830189	1.320754717
Land	3.689795918	1.797959184	1.285714286

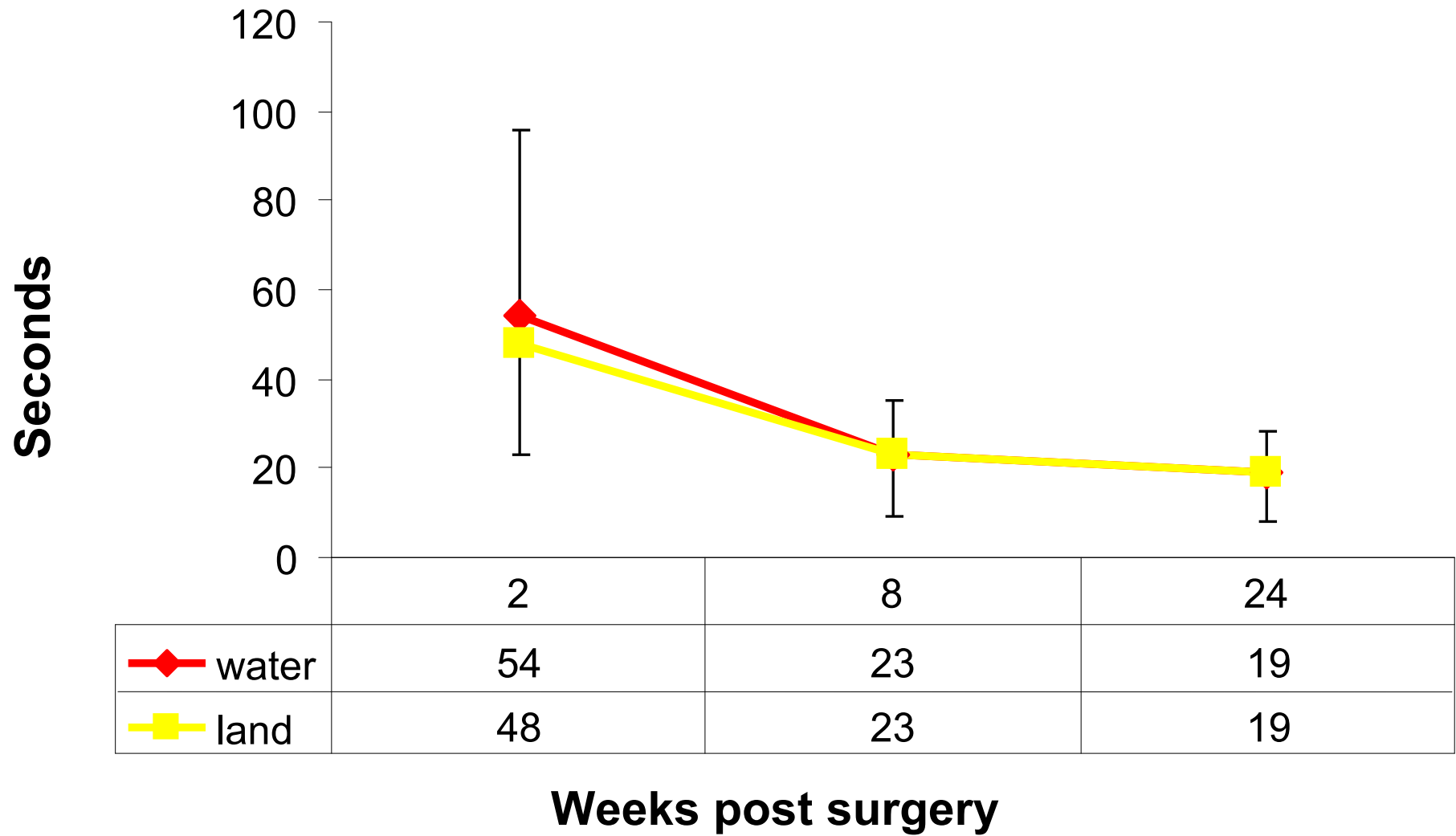
Weeks post surgery



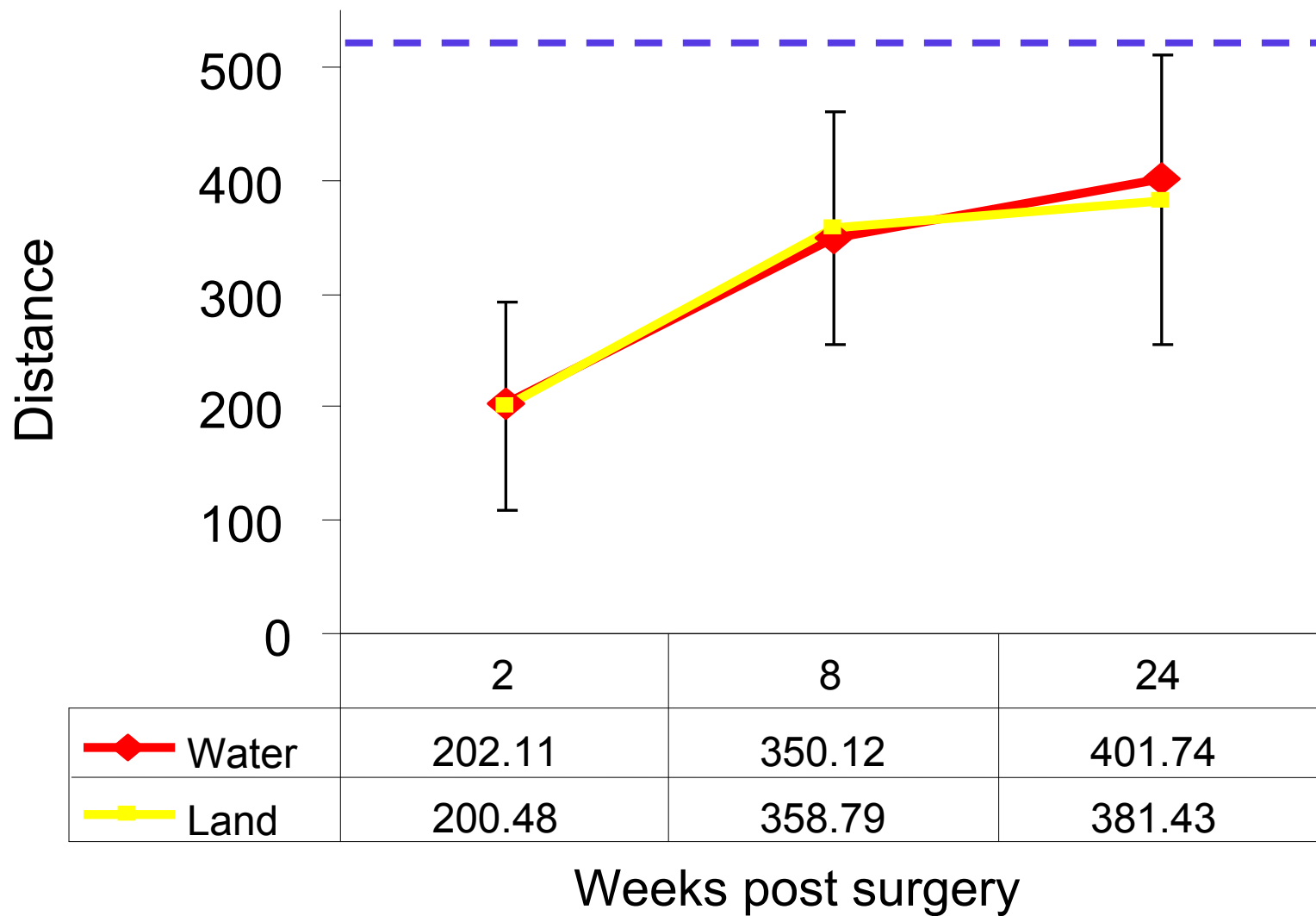
ROM



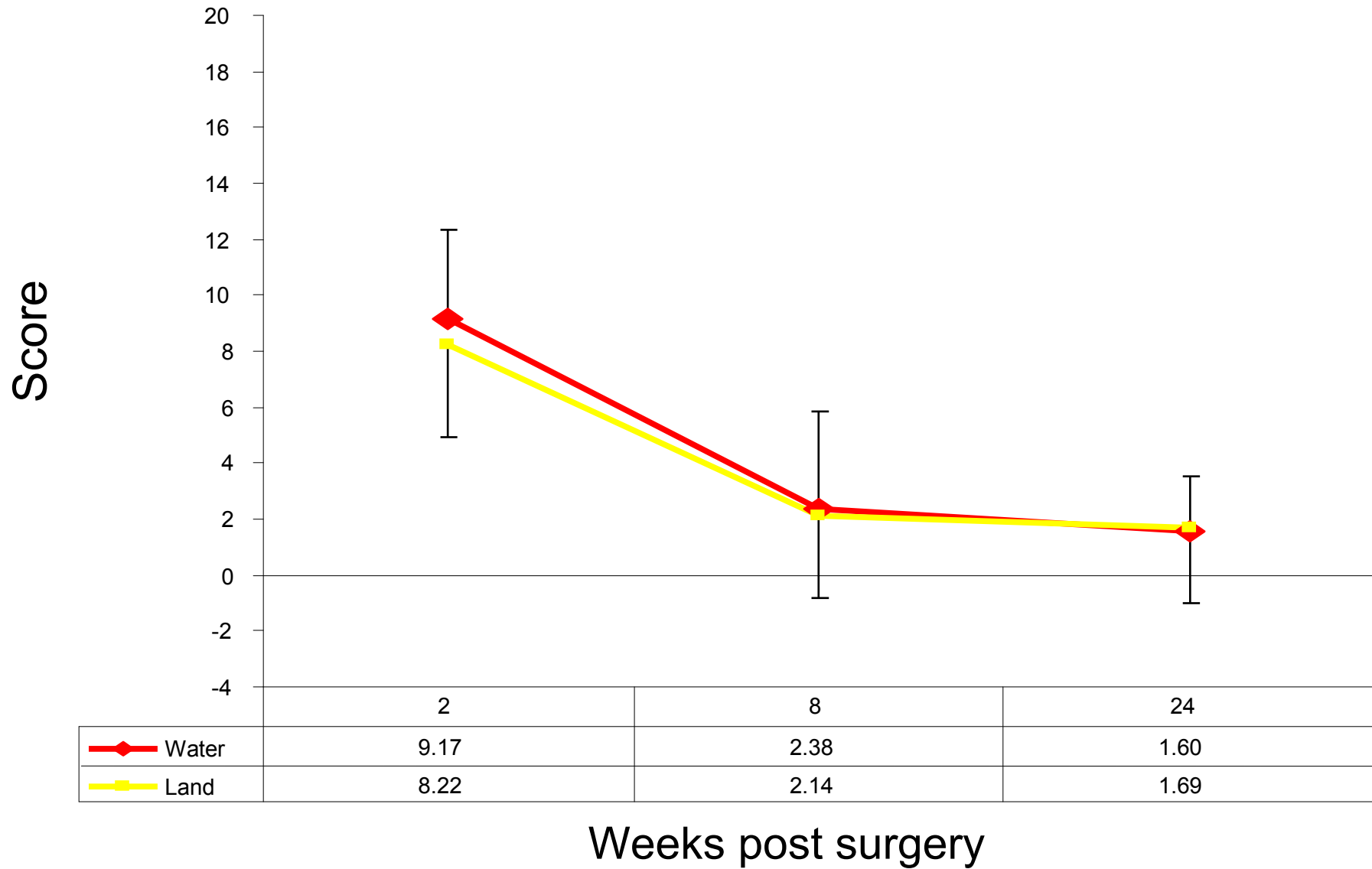
STAIR DESCEND



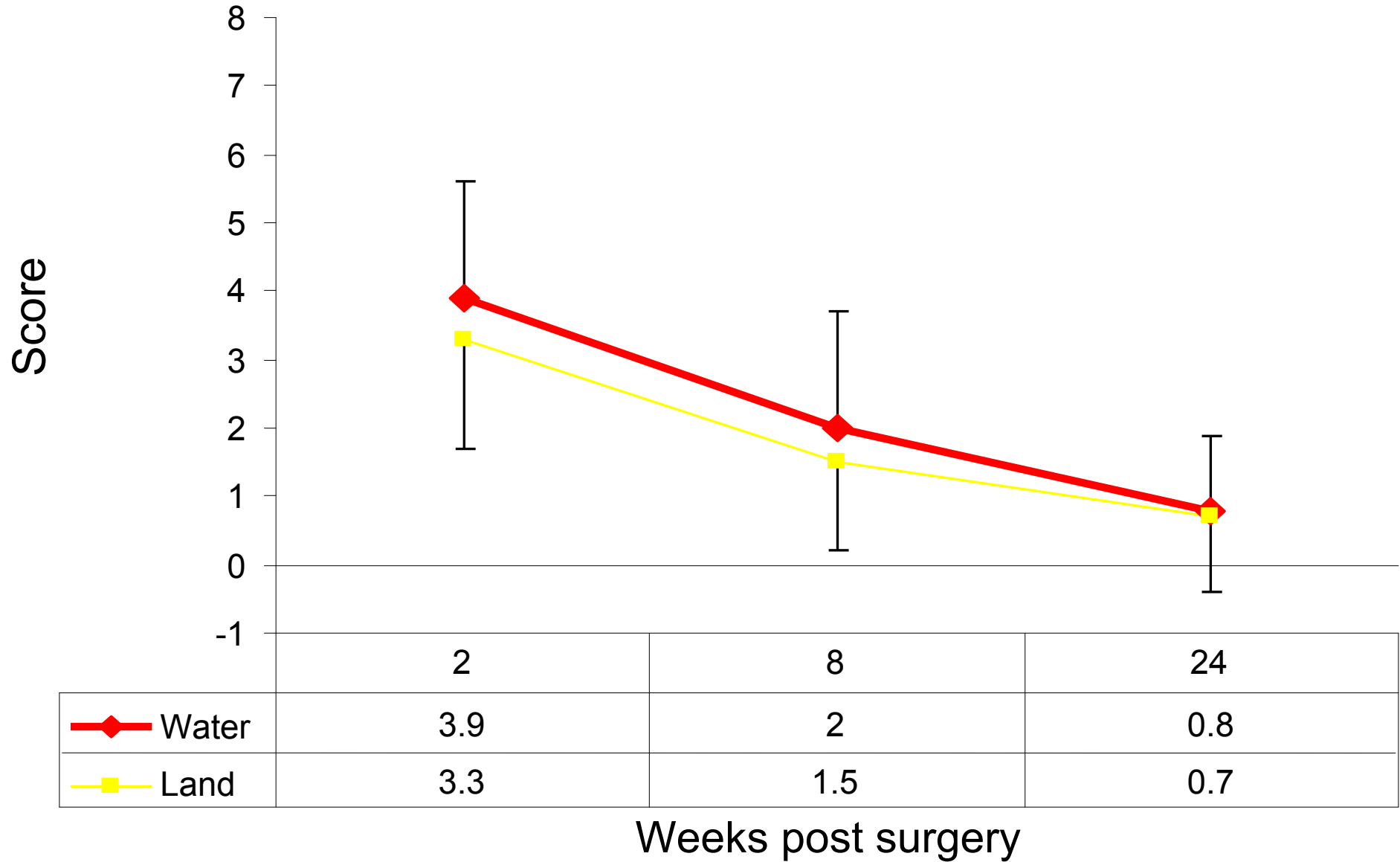
6 minute walk test



WOMAC PAIN

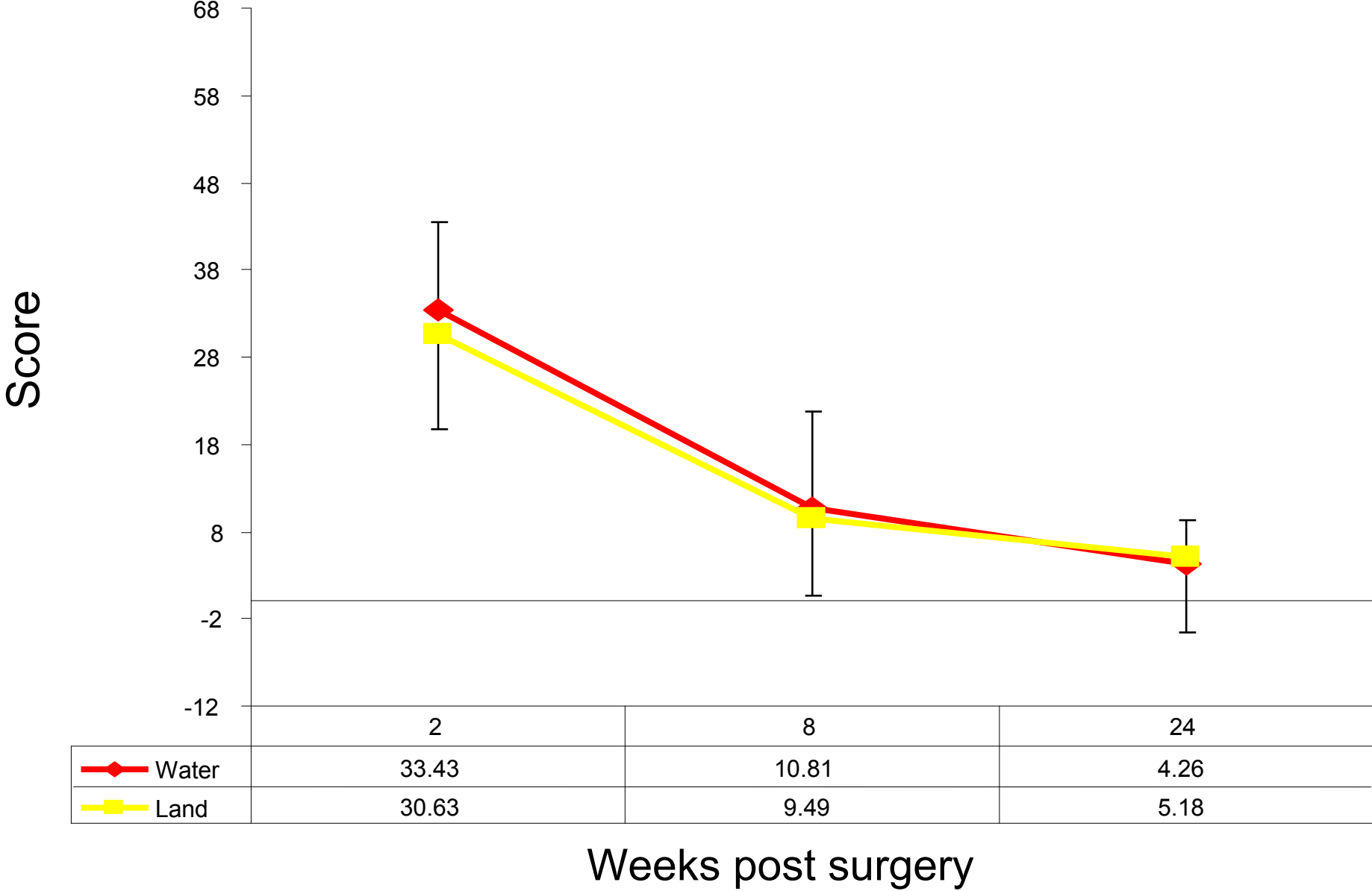


WOMAC STIFFNESS



	2	8	24
Water	3.9	2	0.8
Land	3.3	1.5	0.7

WOMAC DIFFICULTY





Outcomes and evaluation

Major conclusion

- As cost of hydrotherapy at Fairfield Hospital is not borne by health facility, and that both programmes are associated with comparable outcomes and compliance, both modes represent “smart choices”
- Hydrotherapy would need to be far superior to justify onsite pool. Decision to provide a pool onsite would be made on benefits to other clinical groups.



Sustaining change

- Both programmes continue to be offered
- Results have informed pre-operative education programme locally
- Propagating change
 - Study has been discussed with SSWAHS Physiotherapy Clinical Network
 - Study has been presented at local and national conferences
 - Study is planned for submission to peer-reviewed, high impact journal
 - EBP- Design was clinically relevant



Future scope

- Subsequent study including a control group
- Larger trials to determine predictors of responsiveness to rehabilitation
- In interim, endeavour to achieve uniformity in outcome monitoring across SSWAHS to facilitate benchmarking and the identification of most useful rehabilitation strategies



Acknowledgements

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