



iCAHE JC Critical Appraisal Summary

Journal Club Details

Journal Club location	Southern Wellness
JC Facilitator	Bronwyn Keller
JC Discipline	Physiotherapy

Question

Review Question/PICO/PACO

- P Older Adults with Type 2 Diabetes
- I Resistance Exercise
- C Aerobic/Circuit Exercise or Other
- O Glycaemic Control Hb1C/Adipose Tissue/BP/Fitness/QoL

Article/Paper

Sigal R, Kenny G, Boule N, Wells G, Prud'homme D, Fortier M, Reid R, Tulloch H, Coyle D, Phillips P, Jennings A & Jaffey J, 2007, 'Effects of Aerobic Training, Resistance Training, or Both on Glycemic Control in Type 2 Diabetes: A Randomised Trial', *Annals of Internal Medicine*, vol. 146, no. 6, pp. 357-369

Please note: due to copyright regulations CAHE is unable to supply a copy of the critically appraised paper/article. If you are an employee of the South Australian government you can obtain a copy of articles from the [DOHSA librarian](#).

Article Methodology:

Click [here](#) to access critical appraisal tool

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Ques No.	Yes	Can't Tell	No	Comments
1	✓			<p>Did the trial address a clearly focused issue?</p> <p>Yes – The trial addressed all aspect of PICO: To determine the effects of aerobic training alone, resistance training alone, and combined exercise training on hemoglobin A1c values in patients with type 2 diabetes.</p>
2	✓			<p>Was the assignment of patients to treatments randomised?</p> <p>Yes – Groups with stratified by sex and age, and then randomized with central randomization and allocation concealment. Randomisation was conducted by the personal trainer and not the research coordinator to ensure partial blinding.</p>
3	✓			<p>Were all of the patients who entered the trial properly accounted for at its conclusion?</p> <p>Yes – a comprehensive study flow diagram showed the flow of participants through the trial</p> <p>Is it worth continuing?</p> <p>Yes</p>
4			✓	<p>Were patients, health workers and study personnel 'blind' to treatment?</p> <p>No - Due to the nature of the intervention, blinding of participants and trainers was not possible but technologists were blinded to study outcomes using objective measures</p>
5	✓			<p>Were the groups similar at the start of the trial?</p> <p>Yes – The baseline characteristics of the groups were similar in age, sex, and ethnicity, duration of diabetes and medication use.</p>
6	✓			<p>Aside from the experimental intervention, were the groups treated equally?</p> <p>Yes – The intervention was the only difference between the groups.</p> <p>All exercise group participants were provided with a 6-month membership at the exercise facility; the membership fees were covered by study funding to remove economic barriers to participation. Individual exercise supervision was provided weekly for the first 4 weeks after randomization and biweekly thereafter. Attendance was verified through direct observation, exercise logs, and electronic scanning of membership cards</p>

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7	✓			<p>What are the results?</p> <p>“The absolute change in the hemoglobin A1c value in the combined exercise training group compared with the control group was 0.51 percentage point (95% CI, 0.87 to 0.14) in the aerobic training group and 0.38 percentage point (CI, 0.72 to 0.22) in the resistance training group. Combined exercise training resulted in an additional change in the hemoglobin A1c value of 0.46 percentage point (CI, 0.83 to 0.09) compared with aerobic training alone and 0.59 percentage point (CI, 0.95 to 0.23) compared with resistance training alone. Changes in blood pressure and lipid values did not statistically significantly differ among groups. Adverse events were more common in the exercise groups.”</p>
8	✓			<p>How precise was the estimate of the treatment effect?</p> <p>95% CI was reported</p>
9			Journal Club to discuss	<p>Can the results be applied to the local population?</p> <p>CONTEXT ASSESSMENT (please refer to attached document)</p> <ul style="list-style-type: none"> – Infrastructure – Available workforce (? Need for substitute workforce?) – Patient characteristics – Training and upskilling, accreditation, recognition – Ready access to information sources – Legislative, financial & systems support – Health service system, referral processes and decision-makers – Communication – Best ways of presenting information to different end-users – Availability of relevant equipment – Cultural acceptability of recommendations – Others
10				<p>Were all important outcomes considered?</p>
11				<p>Are the benefits worth the harms and costs?</p>
12				<p>What do the study findings mean to practice (i.e. clinical practice, systems or processes)?</p>
13				<p>What are your next steps?</p> <p>ADOPT, CONTEXTUALISE, ADAPT</p> <p>And then (e.g. evaluate clinical practice against evidence-based recommendations; organise the next four journal club meetings around this topic to build the evidence base; organize training for staff, etc.)</p>
14				<p>What is required to implement these next steps?</p>