

significantly better VISA-G (baseline $p=0.04$, MD=-11.2, 95%CI=-21.70:-0.70, 12 weeks $p<0.00$, MD=-20.72, 95%CI=-31.22:-10.22, 52 weeks $p<0.00$, MD=-16.71, 95%CI=-27.21:-6.22) and secondary measure scores compared to placebo at all timepoints when BMI<25.

Discussion: MHT or placebo combined with tendon-specific or sham exercise plus education reduced pain and increased function for this population. Women with BMI<25 who were allocated MHT with any exercise plus education were better than placebo cream. MHT may be an effective intervention for post-menopausal women with GTPS when BMI <25 and when prescribed in conjunction with any exercise plus education. Any exercise strategy is effective when prescribed with education about avoiding gluteal tendon compression and load management.

Conflict of interest: None declared.

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S43

Joint Associations of Physical Activity and Insomnia Symptoms with Incident Mood Disorder in a population-based cohort study

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Background: When examined as separate risk factors, low physical inactivity and insomnia symptoms are both associated with increased risk of mood disorders including depression, however few studies examine these risk factors jointly. The aim of this study was to examine the joint association of physical activity and insomnia symptoms with the incidence of mood disorder in Australian adults.

Methods: Data were drawn from the 2013-2018 waves of the annual Household Income and Labour Dynamics in Australia panel study. In 2013, participants completed a survey assessing mood and anxiety disorder, physical activity, insomnia symptoms, lifestyle behaviours (i.e., diet, sleep duration, smoking, alcohol), reported diagnosis of depression/anxiety, and sociodemographic characteristics. Incident mood disorder was assessed using the MHI-5 and defined as mood disorder (MHI-5 score <54) in 2013 and no mood disorder (MHI-5 score >54) in 2014-2018. Physical activity was assessed using the IPAQ-SF and classified as low, moderate, and high using standard scoring protocols. Insomnia symptoms were assessed using three items assessing poor sleep quality and difficulty initiating and/or maintaining sleep and dichotomised as Insomnia symptoms/ No Insomnia. Participants were then classified into one of six groups representing distinct combinations of physical activity and insomnia symptoms. Only participants with complete data on covariates and exposure variables and who were free of mood disorder in 2013, and who had at least one follow-up survey during 2014-2018 were included in the analysis. A discrete-time proportional-hazards model was estimated using a logit-hazard (i.e., logistic) regression model to examine the association between joint categories of physical activity and insomnia symptoms and incident mood disorder between 2014-2018 adjusted for sociodemographics, lifestyle behaviours and prior/current diagnosis of depression/anxiety.

Results: There were 11,023 participants with complete data and no mood disorder in 2013. The incidence of mood disorder in 2014-2018 was 21.1%. Relative to participants classified as High PA/No insomnia symptoms, reporting either High PA/Insomnia (OR = 1.87, 95% CI 1.57,

2.23), Moderate PA/Insomnia (OR = 1.94, 95% CI 1.62, 2.32), or Low PA/Insomnia (OR = 2.33, 95% CI 1.96, 2.77) was significantly associated with increased likelihood of incident mood disorder.

Discussion: The combination of any level of physical activity and insomnia symptoms was associated with an increased likelihood of reporting mood disorder during the following five years, and this increased as physical activity decreased. These observations highlight the potential benefit of interventions targeting physical activity and insomnia symptoms to promote good mental health.

Conflict of Interest Statement: My co-authors and I acknowledge that we have no conflict of interest of relevance to the submission of this abstract

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S55

Prevalence of chronic conditions in masters games athletes

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Introduction: Masters athletes (MA) are typically individuals 35 years of age or older who engage in sporting competitions or systematic training. They are widely reported to be healthier and to exhibit a lower risk of chronic conditions than age-matched peers. Few studies have examined the prevalence of chronic conditions in MA. The study aimed to identify the prevalence of chronic conditions and their possible predictors in MA, and their prevalence compared to the general population.

Methods: Masters athletes competing at the 2017 Australian Masters Games (n= 4,848) and 2018 Pan Pacific Masters Games (n=14,455) were invited to complete an online survey collecting data on demographics and health, including presence of chronic conditions. A logistic regression model was built to investigate the association between demographic and lifestyle factors and the prevalence of having at least one chronic condition in MA. The 2017-18 Australian National Health Survey (AHS) provided data on the general Australian adult population. Age- and sex-adjusted prevalence of selected chronic conditions was compared with AHS data using a weighted t-test, and p values were adjusted for multiple comparisons. Statistical analyses were conducted using R version 3.6.3 and level of significance $\alpha=0.05$.

Results: A total of 814 MA (53.7±10.6 years, 60.7% female) completed the targeted survey questions. Overall, 53.1% of MA had at least one chronic condition, with the most prevalent being food allergies and intolerances (14.9%), osteoarthritis (13.3%), heart conditions (11.2%), asthma (10.3%), anxiety (8.9%), depression (6.9%), and hypertension (4.5%). Being female and drinking more than two standard drinks per day had a higher OR for having at least one chronic condition (OR, 1.6; 95%CI, 1.2-2.2 and OR, 2.3; 95%CI, 1.1-5.0 respectively). The prevalence of osteoarthritis was similar in MA compared to the general population (11.3%; 95%CI 9.1-13.6; 13.5% respectively, $p=0.45$). The prevalence of all other chronic conditions was lower in MA compared to the general population (anxiety, asthma, cancers, depression, hyperlipidaemia, hypertension, osteoporosis, type 2

diabetes mellitus).

Discussion: Being female and alcohol consumption appeared to be key predictors of having a chronic condition in MA, and MA had a lower prevalence of most chronic conditions compared to the general population. This study highlights key factors influencing the health of MA as well as the potential health benefits of regular exercise and participation in sport for older adults.

Conflict of interest statement: My co-authors and I acknowledge we have no conflict of interest to the submission of this abstract.

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Pelvic floor symptoms are an overlooked barrier to exercise participation: a survey of 4556 symptomatic women

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Introduction: Physical inactivity is the second highest contributor to chronic disease and injury in Australian women. Pelvic floor (PF) disorders are highly prevalent; 25% of women in the general population report symptoms. This study aimed to (i) investigate barriers to exercise in women with PF symptoms (urinary incontinence [UI], anal incontinence [AI] and pelvic organ prolapse [POP]) (ii) determine factors associated with reporting PF symptoms as a substantial exercise barrier and (iii) investigate the association between reporting PF symptoms as an exercise barrier and physical inactivity.

Methods: Australian women, 18-65 years with PF symptoms (n=4556), completed a survey containing validated PF and physical activity questionnaires. Participants reported exercise barriers and the degree they limited participation. Binary logistic regression was used to identify variables associated with (a) identifying PF symptoms as a substantial exercise barrier (stops exercise participation often/all of the time) and (b) physical inactivity.

Results: In this cohort, 31% (n=1429) reported PF symptoms as a substantial exercise barrier, UI was the most frequently reported barrier. Two-thirds of participants who identified POP and UI as exercise barriers, had stopped exercising. The odds of reporting PF symptoms as a substantial exercise barrier were significantly higher for women with severe UI (odd ratio (OR):4.77 CI:3.60, 6.34), high symptom bother (UI OR:10.19, CI:7.24, 14.37; POP OR:22.38, CI:13.04, 36.60; AI OR:29.66, CI:7.21,122.07), those who experienced vaginal birth (one birth OR:2.04, CI:1.63, 2.56) or a 3rd/4th degree obstetric tear (OR:1.47, CI:1.24, 1.76). The odds of being physically inactive were greater in women who identified PF symptoms as an exercise barrier than those who did not (OR:1.33, CI:1.1, 1.59).

Discussion: A high prevalence of PF symptoms in women has been previously established. This study demonstrated that PF symptoms are a substantial barrier to exercise participation, causing one in three symptomatic women to stop participation in exercise often/all the time. Physical inactivity is a major cause of mortality and morbidity in Australian women. Pelvic floor symptoms stop women of all ages from participating in exercise, including younger nulliparous women. Those who identify their PF symptoms as a substantial barrier to exercise have higher odds of being physically inactive. Pelvic floor muscle training has level 1A evidence as an effective, low-risk form of conservative management for UI symptoms in the general population. Identification and management of PF symptoms could allow women to remain physically active across their lifespan.

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A comparison of acceleration and maximum speed sprint training on eccentric hamstring strength and hamstring muscle architecture

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Background: Hamstring strain injuries (HSI) are prevalent in field sports with a high-speed running component. It is widely believed that sprint training can have a HSI preventative effect due to the relatively high muscle activation. However, it is not known whether acceleration or maximum speed training is more effective for influencing HSI risk indicators such as eccentric strength or fascicle length. Therefore, the purpose was to investigate the differences between acceleration and maximum speed sprint training on eccentric hamstring strength and BFLH architecture.

Methods: Community footballers (age = 23.1 ± 3.8, n = 12) were recruited for six-weeks of acceleration or maximum speed sprint training. Athletes completed pre- and post-testing consisting of a 40-m sprint test with 0-10-m and 30-40-m splits, an eccentric hamstring assessment on the NordBord, and an ultrasound assessment of the BFLH. Athletes were ranked on eccentric hamstring strength then separated into three groups: acceleration (n = 4), maximum speed (n = 4) and control (n = 4). Sample size was limited due to COVID-19 restrictions. Acceleration and maximum speed training was completed twice weekly. Ultrasound assessment was performed 24-hours post-session 2, 4, 6, 8, 10 and, 12. Athletes were asked to rate their soreness on a Likert scale 24-hours post-session.

Results: Mean eccentric hamstring strength improved in the acceleration (5.3%, d = 0.27) and maximum speed (3.5%, d = 0.31) groups, however, not in the control (0.9%, d = 0.09) group. Acceleration (+23%, d = 1.59) and maximum speed (+20%, d = 1.81) athletes increased BFLH fascicle length compared to control athletes (-6%, d = -0.31). Acceleration improved by 2% and 3% for the acceleration and maximum speed athletes respectively. Likewise, maximum speed improved by 11% and 8% for the acceleration and maximum speed athletes. Control athletes performed 2% worse in acceleration and 1.5% better in maximum speed. Neither intervention reported excessive soreness post-sessions.

Discussion: These findings indicate that sprint training for the mitigation of HSI risk factors is a promising training intervention. Specifically, the large increase in BFLH fascicle length suggests that the inclusion of regular sprint training should contribute to a well-rounded strength and conditioning program. There appear to be no substantial differences between the two training interventions, however, both interventions outperformed control subjects who completed their normal training schedule during this period. Minimal hamstring muscle soreness, coupled with clear improvements in speed qualities suggest that sprint training acts as a performance enhancement and injury prevention method.

Conflict of Interest Statement: Dr David Opar is listed as a coinventor on a patent filed for a field test of eccentric knee flexor strength (PCT/AU2012/001041.2012), known commercially as the NordBord. Dr Opar is also a minority shareholder in a company (Vald Performance) that commercializes the device. David Opar is the Chair of