

participants pre- and 159 (44.79%) participants post-COVID-19. There were no significant differences between the two groups on all health-related outcome measures. **DISCUSSION:** Results indicated that there was no decline in the health outcomes of the participants after the COVID-19 pandemic. This finding is not consistent with the preliminary data available in the literature that report worse health outcomes in older adults after the pandemic. We hypothesize that the reason for the difference is that our study population was from a cohort that was predominantly from a higher education and socioeconomic status, with adequate access to healthcare and health resources, and high health literacy. Future studies should consider older adult populations where social determinants of health may be a consideration.
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Bioimpedance Spectroscopy As A Practical Indicator Of Short-term Performance Changes In Collegiate Athletes
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Bioelectrical impedance spectroscopy (BIS) provides a noninvasive method to assess hydration status and total body water (TBW) distribution, including whole-body and segmental intracellular and extracellular compartments and their ratios (ICW/ECW). Routine monitoring of compartment water in sport is gaining attention, though it is unclear whether BIS-derived measures are associated with short-term performance changes. **PURPOSE:** To examine the repeated measures association between BIS-derived body water variables and peak power (PP) during maximal cycling in collegiate hockey players. **METHODS:** Twenty male NCAA Division I athletes (mean±SD: age 21.4±1.6 years, height 184.7±6.0 cm, body mass 88.1±8.5 kg) completed BIS assessments (SOZO, ImpediMed) before a 6-second maximal Wattbike sprint across 32 weeks and 159 sessions. BIS testing occurred each morning upon arrival at the training facility following standardized procedures and whole-body and leg segment data were extracted. PP during the sprint served as the final warm-up before practice or games. Data were collected between July 16, 2024, and March 20, 2025, as part of a longitudinal athlete monitoring program yielding 1,795 observations. Session-to-session change scores for all variables were calculated and analyzed. Repeated-measures correlations were performed to identify significant relationships and all significant correlates were further analyzed using linear mixed-effects models (LMMs) controlling for day of testing. **RESULTS:** Changes in TBW ($p = 0.75$), Leg ICW ($p = 0.18$), and Leg ICW/ECW ($p = 0.09$) were not significant correlates of changes in PP. Linear mixed-effects models controlling for day of the week showed that changes in whole-body ECW ($\beta = -11.21$, $p = 0.001$, $f^2 = 0.007$), ICW ($\beta = 6.70$, $p = 0.011$, $f^2 = 0.004$), and the ICW/ECW ratio ($\beta = 174.65$, $p < 0.001$, $f^2 = 0.009$) were significant predictors of changes in PP. Leg ECW was also negatively associated with PP ($\beta = -13.20$, $p = .045$, $f^2 = 0.002$). All effect sizes were negligible-to-very small ($f^2 \leq 0.009$). **CONCLUSION:** Although statistically significant, changes in BIS-derived body water variables explained, at best, roughly 1% of the variance in PP. Thus, the practical significance of compartment water monitoring to predict short-term changes in maximal cycling power appears minimal.

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Does A History Of Lower Limb Injury Impair Athletic Skills In Youth Athletes?
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Lower limb injuries are common in youth sports and may lead to lasting performance deficits. The long-term impact in adolescents is poorly understood. **PURPOSE:** To investigate whether a history of lower limb injury leads to performance deficits in youth athletes. **METHODS:** We tested 22 competitive athletes between the ages of 11 and 17 (9 female, 13 male). All subjects completed a questionnaire regarding history of injuries and were then tested for countermovement jump (CMJ) height and peak take-off force using Vald ForceDecks force plates, quadricep strength and torque using a Vald Dynamo dynamometer, and 40-yard dash and 5-10-5 agility shuttle, capturing performance with the Vald SmartSpeed pulsed laser. All tests were completed by licensed physical therapists who were trained in the protocols. We evaluated population differences using chi-squared tests and independent-samples t-tests; where assumptions were violated, Mann-Whitney U was used. Linear regression measured the effects of previous lower limb injury on performance holding sex and maturation variables constant. **RESULTS:** Subjects were 15.0 ± 1.8 yr, 63.6% had a history of lower limb injury (46.2% of males, 88.9% of females; $p = 0.074$). Among subjects with a history of a lower limb injury, CMJ height was 25.9 ± 5.4 cm, peak take-off force was 22.5 ± 2.9 N, quadricep strength was 35.2 ± 12.7 kg, torque was 2.2 ± 0.5 NM, 40-yard dash was 6.1 ± 0.5 sec, and 5-10-5 agility shuttle was 5.4 ± 0.3 sec. For subjects without a history of a lower limb injury, CMJ height was 33.7 ± 6.1 cm, peak take-off force was 22.4 ± 1.4 N, quadricep strength was 42.4 ± 20.0 kg, torque was 2.8 ± 0.8 Nm, 40-yard dash was 5.8 ± 0.5 sec, and 5-10-5 agility shuttle was 5.2 ± 0.4 sec. Significant differences were observed in vertical jump height and quadricep torque. Subjects with a history of lower limb injury jumped 29.6% lower ($p = 0.002$) and generated 23.3% less quadricep torque ($p = 0.046$). No other differences reached significance. Regression analysis, holding sex constant ($p = 0.050$), found a history of lower limb injury to predict a 6.3 cm reduction in jump height ($p = 0.024$; 95% CI of β : -11.7, -1.0). **CONCLUSION:** Youth athletes with a history of lower limb injury exhibited poorer jump height and quadriceps torque. Female athletes had a higher prevalence of lower limb and knee injuries than male athletes.

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The Influence Of Biological Sex On Upper Extremity Power With Lean Mass Held Constant
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Differences in strength and lean mass are well established between biological males and females, with greater disparities found in the upper body. What has been minimally explored is the influence of sex on power generation with lean mass held constant. **PURPOSE:** To test the effect of sex on isotonic power generated in the biceps and triceps while controlling for lean mass. **METHODS:** We tested 68 males and 18 females on body composition and power output. Each subject completed all testing in a single session. Dual-energy X-ray absorptiometry was used to measure lean mass in the dominant and non-dominant arms; this was followed by exercise testing on a Proteus device. Subjects performed a 6-repetition set at 12 lbs of electromagnetic resistance on unilateral biceps curl and triceps extension (dominant and non-dominant arms tested separately) and bilateral biceps curl and triceps extension. Linear regression analyses measured the effect of sex on power holding age and relevant lean mass constant. For unilateral exercises, lean mass in the involved arm was used; for bilateral exercises, the mean of both arms was used. All analyses were performed on SPSS version 29.0. **RESULTS:** Subject age was 43.0 ± 9.1 yr; there was no difference between males and females ($p = 0.962$). Lean mass was 8.8 ± 2.4 lb in the dominant arm, 8.5 ± 2.4 lb in the non-dominant arm, and the mean of both limbs was 8.6 ± 2.4 lb; males had 56.8% more mass ($p <$

0.001). Overall, subjects generated 125.5 ± 33.7 W in the unilateral biceps curl (mean of both arms), 144.0 ± 40.6 W in the unilateral triceps extension (mean of both arms), 145.1 ± 34.7 W in bilateral biceps curl, and 168.7 ± 46.5 W in bilateral triceps extension. Males generated more power in each exercise ($p < 0.001$). Holding age and relevant lean mass constant, males generated more power in the dominant biceps curl ($p = 0.030$; 95% CI of $\beta = 2.4, 47.6$) and dominant triceps extension ($p = 0.048$; 95% CI of $\beta = 0.2, 54.8$). Sex did not predict power in non-dominant biceps curl ($p = 0.158$; 95% CI of $\beta = -5.9, 35.3$), non-dominant triceps extension ($p = 0.125$; 95% CI of $\beta = -5.7, 45.6$), bilateral biceps curl ($p = 0.350$; 95% CI of $\beta = -10.2, 28.5$), or bilateral triceps extension ($p = 0.480$; 95% CI of $\beta = -18.9, 39.9$). **CONCLUSION:** Holding age and relevant lean mass constant, males generated more power in dominant arm biceps curl and triceps extension.

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Upper Body Power Differs Between Men And Women Holding Lean Mass Constant

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Differences in muscle performance between biological males and females are abundant in the literature. What remains scarce is evidence of power disparities with lean mass held constant. **PURPOSE:** To examine differences between sexes in muscle power generated in row and chest press exercises while controlling for lean mass. **METHODS:** We measured body composition and muscle power in 68 males and 18 females across the lifespan. Lean mass was assessed in the dominant arm, non-dominant arm, and torso using dual-energy X-ray absorptiometry. Following scans, exercise testing was conducted on a Proteus device. All subjects performed the General Power Test, which includes a 6-repetition set at 12 lbs of multiplanar resistance on unilateral row and chest press (each arm tested separately) and bilateral row and chest press. Linear regression analyses measured the effect of sex on power output holding age and relevant lean mass constant. For bilateral exercises, we used total upper body lean mass. For unilateral exercises, we used lean mass of the torso and involved arm. Analyses were conducted on SPSS version 29.0. Significant ($p < 0.05$) and trending ($p < 0.08$) relationships are reported. **RESULTS:** Subject age was 43.0 ± 9.1 yr and total lean mass was 134.0 ± 23.8 lbs. Segmental lean mass was 61.5 ± 12.2 lbs in the trunk, 8.8 ± 2.4 lbs in the dominant arm, and 8.5 ± 2.4 lbs in the non-dominant arm. In the unilateral row, subjects produced 167.0 ± 31.9 W in the dominant arm and 166.0 ± 31.2 W in the non-dominant arm. In the bilateral row, they produced 153.3 ± 28.6 W. In the unilateral press, subjects produced 167.4 ± 36.6 W in the dominant arm and 163.2 ± 31.2 W in the non-dominant arm. In the bilateral press, they produced 158.2 ± 27.4 W. Regression analyses holding age and relevant lean mass constant found more power was generated by males in the dominant arm row ($p = 0.065$; 95% CI of $\beta = -1.1, 36.0$), dominant arm press ($p = 0.063$; 95% CI of $\beta = -1.1, 42.2$), non-dominant arm press ($p = 0.008$; 95% CI of $\beta = 6.7, 42.1$), and bilateral press ($p = 0.079$; 95% CI of $\beta = -1.7, 31.4$). Sex was insignificant in the non-dominant row ($p = 0.088$; 95% CI of $\beta = -2.3, 33.1$) and bilateral row ($p = 0.136$; 95% CI of $\beta = -4.3, 31.3$). **CONCLUSION:** Controlling for age and lean mass, males generated more upper body power, implicating possible differences in fiber typing, muscle insertions, or sarcoplasmic mass.

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Exploring Athletes' Use Of Emerging Technologies To Inform Sports Nutrition Strategies

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Purpose: To explore athletes' use of, and engagement with emerging technologies including wearables, real-time monitors, artificial intelligence (AI) and dietary intake applications. **Methods:** Online questionnaire distributed to athletes via sports dietitians, high-performance athlete programs and social media. Eligible participants were athletes (≥ 18 years) actively participating or competing in sports under the Participant Classification Framework. Survey responses were analysed using SPSS (v.31), with appropriate statistical tests (Chi-Squared, Fisher's Exact, Mann Whitney U, Kruskal-Wallis) applied to examine associations between athlete characteristics and technology use. **Results:** A total of 44 athlete participants completed the survey, with 75% classified as recreational to sub-elite level. 65.9% of participants reported using wearables, 44.1% used real-time monitors, 36.1% used dietary applications and 32.4% used AI. Significant cost was a common barrier to use of wearables, real-time monitors and dietary applications (60%, 51.8% and 50%, respectively). Notably, most athletes in the study (61.4%) had not consulted previously with a sports dietitian, which may explain lack of use of dietary intake applications. Indeed, those who had engaged with a dietitian were more open to adopting dietary intake applications in the future ($U = 80.000, Z = -3.433, p < 0.001$). **Conclusion:** Athlete engagement with innovative technologies varies, with higher adoption for wearables and lower uptake for dietary applications, AI programs and real-time monitors. Key barriers identified included cost, data complexity, fixation on outputs and concerns around data validity. Dietetic engagement was associated with greater openness to future technology use, emphasizing the importance of practitioner input.

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Urinary Incontinence And Depressive Symptoms In Postpartum Individuals: Does Physical Activity Play A Moderating Role?

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BACKGROUND: Postpartum depression (PPD) and urinary incontinence (UI) are separate conditions that often affect individuals during the postpartum period following childbirth and significantly impact an individual's quality of life. Research has identified an association between depressive symptoms (DS) and UI in the postpartum population. Moderate-intensity physical activity (PA) has been suggested as a potential modifiable risk factor for both PPD and UI. **PURPOSE:** To determine if moderate-intensity PA (measured by the International Physical Activity Questionnaire (IPAQ)) moderated the relationship between UI (measured by the Pelvic Floor Impact Questionnaire (PFIQ-7) and the Australian Pelvic Floor Questionnaire (APFQ)) and depressive symptoms (DS) (measured by the Edinburgh Postnatal Depression Scale (EPDS)) among individuals in the 12-months following childbirth. **METHODS:** A cross-sectional study was used, and participants completed four self-administered online questionnaires through Qualtrics: the IPAQ, PFIQ-7, APFQ, and EPDS. Hierarchical linear regressions were performed to determine if moderate-intensity PA moderated the relationship between DS and UI. **RESULTS:** Overall, 246 participants were included in the final analysis and moderate-intensity PA was not a significant moderator between DS and UI ($\Delta R^2 = .008, F \text{ change} = 1.98, p = .160$); ($\Delta R^2 = .00, F \text{ change} = .02, p = .9$). However, sub-analyses found leisure time PA (LTPA) and leisure time walking were significant moderators of UI (as measured by the APFQ) and DS ($\Delta R^2 = .02, F \text{ change} = 4.31, p = .04$); ($\Delta R^2 = .02, F \text{ change} = 4.64, p = .03$). **CONCLUSION:** Moderate-intensity PA does not moderate the relationship between UI and DS among individuals in the