

April 25, 2026

CSURF 2026

UNDERGRADUATE RESEARCH FORUM

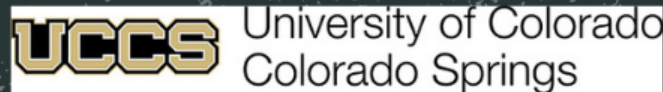
Celebrating Research and Creative Works
Within the Local Higher-Ed Community

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SCAN to Register



**Student
Presenter
Registration
OPENS Jan. 19
Closes April 6**

Pikes Peak State College Downtown Campus



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MAIN ENTRANCE

Pikes Peak State College

Oral Sessions
 CONTINUE UP THE STAIRS 2ND FLOOR

2026 Colorado Springs Undergraduate Research Forum (CSURF)
 April 25, 2026
 Pikes Peak State College (Downtown 100 W Pikes Peak Ave)

8:15-9:00 am Check-in and Set Up - 1st Floor (Plus Peak Ave. entrance)				
Oral Presentations Rooms	Room #	Room #	Room #	Room # 1118
Faculty Session Chairs	Jessie Peña	Stefan Houbertson	Jackal Taborson	Rowing
Oral Session 1 9:00 - 10:20 am	Plant-Fungal Symbiosis and Environmental Adaptation Katzert, M. Ollier, T. Hall, N. (J) Hama, J.	Electrochemical Crystal Growth and Materials Science Bost, E. Willner, R. Johnson, M. (Group) Smalling, J.	Indigenous & Marginalized Cultural Identity Aval, J. Nagel, H. Schramm, M. Vasquez, S.	Poster Staging Room <small>Drop off your poster after your session begins</small>
9:15-10:15am Poster Session 1 - The Learning Commons Leslie Newton, Jorcintha Polegopus, Mercedes				
Oral Presentations Rooms	Room #	Room #	Room #	Room # 1118
Faculty Session Chairs	Mark Saviano	Emily Forand	David Schultz	Rowing
Oral Session 2 10:30-11:50am	Neurological Systems, Addiction, and Modern Behavior Chapman, T. Hutchison, S. Davis, J. Powell, L.	Gender, Power, and Systemic Control Ford, JD Hall, N. (J) Schauer, T. Vencor, R.	Stress, Physiological Response, and Policy Impact Gonzalez Paris, V. Wang, P. Griffin, L.	Poster Staging Room <small>Drop off your poster after your session begins</small>
11:45am-12:45pm Poster Session 2 - The Learning Commons Wayne Arlt, Brett Woodard				

Schedule of Events



CSURF Book of Abstracts



2026 Colorado Springs Undergraduate Research Forum (CSURF)

April 25, 2026

Pikes Peak State College (Downtown-100 W Pikes Peak Ave)

8:15-9:00 am	Check-in and Set Up - 1st Floor (Pikes Peak Ave. entrance)			
Oral Presentations Rooms	Room # s215	Room # s228	Room # s232	Room # s116
Oral Session 1 9:00 - 10:20 am	Faculty Session Chairs Jesús Peña	Stafan Huddleston	Jackal Tanelorn	Roving
	Plant-Fungal Symbiosis and Environmental Adaptation	Electrochemical Crystal Growth and Materials Science	Indigenous & Marginalized Cultural Identity	Poster Staging Room Drop off your poster HERE until your session begins
	Katzen, M.	Bost, E	Axel, J.	
	Ollier, T.	Willner, R.	Nagel, H.	
	Hall, N. (2)	Johnson, M. (Group)	Schramm, M.	
Hams, J.	Snelling, J.	Vasquez, S.		
9:15-10:15am	Poster Session 1 - The Learning Commons Leslie Newton, Jennifer Polopolus-Meredith			
Oral Presentation Rooms	Room # s215	Room # s228	Room # s232	Room # s116
Oral Session 2 10:30-11:50pm	Faculty Session Chairs Mark Saviano	Emily Forand	David Schulz	Roving
	Neurological Systems, Addiction, and Modern Behavior	Gender, Power, and Systemic Control	Stress, Physiological Response, and Policy Impact	Poster Staging Room Drop off your poster HERE until your session begins
	Chapman, T.	Ford, JD	Gonzalez Paris, V.	
	Hutchison, S.	Hall, N. (1)	Wang, P.	
	Davis, J.	Schauer, T.	Griffin, L.	
Powell, L.	Venzor, R.			
11:45am-12:45pm	Poster Session 2 - The Learning Commons Wayne Artis, Brett Woodard			

Coffee
&
Bagels

2026 Colorado Springs Undergraduate Research Forum (CSURF)
April 25, 2026
Pikes Peak State College (continued) 2026 Pikes Peak State

8:15-9:00 am Check-in and Set-Up - 1st Floor (Please have an agenda)				
Oral Presentation Rooms	Room # 4215	Room # 4216	Room # 4217	Room # 4218
Faculty Session Chair	David Pardo	Oral Session	Oral Session	Oral Session
Oral Session 1 9:00-10:20 am	Plant Fungal Symbiosis and Environmental Adaptation Katzan, M. Ottar, T. Hall, N. (C)	Electrochemical Crystal Growth and Materials Science Bost, E. Wilner, R. Jahnson, M. (C)	Indigenous & Marginalized Cultural Identity Aval, I. Hagan, M. Beharman, M.	Poster Staging Room Vengren, S.
9:15-10:15 am Poster Session 1 - The Learning Commons (Local Research, Scientific Professional Members)				
Oral Presentation Rooms	Room # 4219	Room # 4220	Room # 4221	Room # 4222
Faculty Session Chair	Mark Sorenson	Emily Frazee	David Schultz	Reagan
Oral Session 2 10:30-11:50 am	Neurological Systems, Addiction, and Human Behavior Chapman, T. Hultstrom, S. Davis, J. Powell, L.	Gender, Power, and Systems Control Ford, JD. Hall, N. (C) Schmitt, J. Venzon, R.	Stress, Physiological Response, and Policy Impact Gonzales Parra, V. Huang, P. Giffin, L.	Poster Staging Room Help of your poster will be appreciated.
11:45am-12:45pm	Poster Session 2 - The Learning Commons (Upper 2026 Oral Presenters)			

Schedule of Events



CSURF Book of Abstracts





Shelves containing various supplies, including boxes, bags, and stacks of paper plates.

Commercial kitchen appliances including a large stainless steel oven and a white refrigerator.

Several boxes of bagels, some open, displaying the bagels. The boxes have a logo and text that reads "THE BAGEL AT THE BAKERY".

Stacks of white paper plates on the counter.

Condiment containers including jars of cream cheese, spreads, and bottles of orange juice.

Additional bakery supplies including more boxes of bagels and a small basket.

A white sliding barn door with a black handle and track, partially open.

A wall-mounted coffee machine in the background hallway.

A box with the text "YOU'RE THE COFFEE TO MY BAGEL" on it.

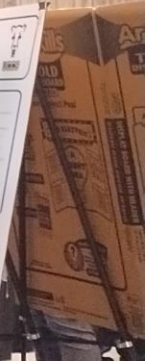
Poster Sessions



EXIT

Parking Validation
WELCOME TO
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WISCONSIN
WISCONSIN PARKING
VALIDATION





COLORADO COLLEGE



Top: Nyah Flores, Sophia Kang, Gabriela Lues, Carlie Malott

Bottom: Sofia Rocca, Owen Simpson, Gus Yar

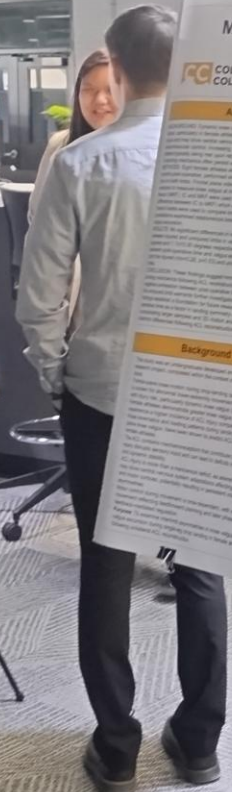
Motor Control Asymmetry in Female Athletes with Unilateral ACL Reconstruction

Sophia Kang, Sofia Rocca, Kaitlyn Wilks, and Eryn Murphy, Ph.D.
Department of Human Biology and Kinesiology, Colorado College



Abstract	Results	Methodology
<p>Abstract</p> <p>ACL reconstruction is a common surgical procedure for ACL injury. However, ACL reconstruction does not fully restore ACL function, leading to motor control asymmetry. This study investigated motor control asymmetry in female athletes with unilateral ACL reconstruction. Participants completed an in-lab survey documenting age, sport, other details, and date of their last period, limb dominance, injured limb, months post-operation, graft type and donor, injury mechanism, training volume, and rehabilitation history.</p> <p>Experimental Procedure</p> <p>Participants completed informed consent. A standard warm-up of 10 body squats, 5 jump squats, and 10m walking lunges was performed prior to testing. Participants completed 3-5 practice (prg) sprints. Anatomical landmarks were marked using tape on the pelvis (ASIS), knee (center of patella), and ankle (mid point of malleoli). A 10cm line on each limb and the middle nail were selected for analysis. Limb testing order was counterbalanced by even-numbered participants beginning with their uninjured limb and odd-numbered participants beginning with their injured limb.</p> <p>Data Collection & Analysis</p> <p>Frontal plane kinematic data were recorded and analyzed using MotusTRAC. Camera settings were set to 4k at 50fps. Motion SIFT was used to calculate knee valgus excursion (KVE-C) and maximum knee flexion (MNF) to calculate knee valgus excursion (KVE-C). Relative differences (injured-uninjured) were calculated to assess motor asymmetry. Spearman's rho correlation was performed to explore relationships between total corrective time and valgus excursion. Statistical analyses were conducted using Python.</p>	<p>Results</p> <p>Figure 1: Bar chart showing knee valgus excursion (KVE-C) for injured and uninjured limbs. Injured limb shows significantly higher KVE-C.</p> <p>Figure 2: Line graph showing maximum knee flexion (MNF) for injured and uninjured limbs. Injured limb shows significantly lower MNF.</p> <p>Figure 3: Scatter plot showing the relationship between KVE-C and MNF. A negative correlation is observed.</p> <p>Figure 4: Photographs of participants performing single-leg step-lunges with angle measurements at ASIS, patella, and heel using a goniometer.</p>	<p>Methodology</p> <p>Participants</p> <ul style="list-style-type: none">Eight female Colorado College student athletes (junior, club-recreational).History of unilateral ACL tear and reconstruction, all months post-operative, and 18-26 years old.Mean age: 19.6±0.50 years; mean months post-op: 31.75±19.9 months.55% primary athletes, 12% dual athletes, 13% recreational athletes.50% hamstring graft, 37% quad graft, 13% patellar graft. <p>Wave Survey</p> <p>Participants completed an in-lab survey documenting age, sport, other details, and date of their last period, limb dominance, injured limb, months post-operation, graft type and donor, injury mechanism, training volume, and rehabilitation history.</p>
<p>Background</p> <p>ACL reconstruction is a common surgical procedure for ACL injury. However, ACL reconstruction does not fully restore ACL function, leading to motor control asymmetry. This study investigated motor control asymmetry in female athletes with unilateral ACL reconstruction. Participants completed an in-lab survey documenting age, sport, other details, and date of their last period, limb dominance, injured limb, months post-operation, graft type and donor, injury mechanism, training volume, and rehabilitation history.</p>	<p>Discussion</p> <p>In the present study, motor control asymmetry was observed between injured and uninjured limbs, suggesting residual motor control asymmetry following ACL reconstruction. This asymmetry may be related to incomplete ACL reconstruction, leading to altered neuromuscular control and motor control asymmetry. The observed asymmetry in motor control may be related to incomplete ACL reconstruction, leading to altered neuromuscular control and motor control asymmetry. The observed asymmetry in motor control may be related to incomplete ACL reconstruction, leading to altered neuromuscular control and motor control asymmetry.</p>	<p>Acknowledgements & References</p> <p>This project would not have been possible without the assistance and guidance from Eryn Murphy, Ph.D.</p>

Development of Fluorinated Amodiaquine Analogs



Adaptive Gym Training for Individuals with Neurological Conditions

Owen Simpson & Colorado College Department of Psychology

Methodology

This study used a qualitative, observational approach through direct shadowing of Kuthmass Neurom. A neurologically adaptive fitness program in Grand Junction, Colorado. Training sessions between coaches and clients with various neurological conditions were observed, with a focus on how activities were individualized through modifications in equipment, instruction, and pacing. Informal and semi-structured conversations with both clients and trainers provided additional insight into participant experiences and program implementation. Field notes were recorded and later reviewed to identify key themes related to accessibility, individualized training, and perceived benefits of the program. Clients across the age and disability spectrum were seen. Some with very visible conditions and others who dealt with more hidden conditions.

References

1. Bennett, J., King, J. J., Franklin, B. A., et al. (2014). Physical activity and health consequences for stroke survivors. *Stroke*, 45(12), 3522-3528.

2. Wang, X. A., Dawson, A. C., Stasi, M. L., Lallo, J., et al. (2019). The impact of physical activity on stroke survivors. *Stroke*, 50(12), 3412-3418.

3. Srinivasan, S. R., & Srinivasan, S. R. (2017). The impact of physical activity on stroke survivors. *Stroke*, 48(12), 3412-3418.

4. Srinivasan, S. R., & Srinivasan, S. R. (2017). The impact of physical activity on stroke survivors. *Stroke*, 48(12), 3412-3418.

5. Srinivasan, S. R., & Srinivasan, S. R. (2017). The impact of physical activity on stroke survivors. *Stroke*, 48(12), 3412-3418.

Introduction

Individuals with neurological conditions represent a major portion (42%) of the total global population, with a billion people worldwide (Eidson, 2012; Savelle, K. M., Savelle, N., et al., 2021). These conditions include disorders such as stroke, Parkinson's disease, multiple sclerosis, cerebral palsy, and traumatic brain injury. These disorders lead to and can alter sensory processing. These conditions may negatively impact independence and participation in physical fitness (Bilinger et al., 2014; Farnell, Meehan, & Pugh, 2020; Shriver et al., 2018).

Regular physical activity is a critical component of rehabilitation and long-term health for individuals with neurological conditions. Exercise improves strength, mobility, cardiovascular health, and functional recovery while promoting neuroplasticity (Bilinger et al., 2014; Cohen et al., 2021; Liu et al., 2019). It also addresses self-reported mental health and quality of life (Petrovic & Salton, 2019). Individualized training opportunities are particularly effective in supporting functional gains (Mittelman et al., 2019).

Despite these benefits, there are still significant barriers to participation in physical activity. Traditional gym environments often lack adaptive equipment, accessible facilities, and adequately trained staff, creating barriers for individuals with neurological conditions (Rimmer & Mansueti, 2012; Rimmer et al., 2004). Consequently, individuals with disabilities are less likely to meet physical activity guidelines, increasing the risk of secondary health complications (Catalano et al., 2014; Rimmer & Mansueti, 2012).

Neurologically adaptive fitness programs could be a promising solution, emphasizing individualized training, equipment modifications, and inclusive coaching strategies. By addressing both environmental and personal barriers, these programs may improve adherence, functional outcomes, and overall quality of life (Liu et al., 2019; Rimmer & Salton, 2019).

This study examines how Kuthmass Neurom, a neurologically adaptive fitness program in Grand Junction, Colorado, addresses these challenges.

Client Interviews

Focus of 6 clients with neurological conditions was explored through 10 interviews.

"The neural health specialists have been helpful in providing me with the resources I need."

"Being in the gym helps me remember to get out there."

"I've been able to walk again. It's a great feeling."

"I've been able to walk again. It's a great feeling."

"I've been able to walk again. It's a great feeling."

Photos



Conclusion

What we learned

I found that neurologically adaptive fitness programs lead to improvements across a wide range of physical outcomes, including strength, mobility, and coordination. Every client who was asked reported better control of their symptoms across the board and general improvements in their health metrics. However, the most significant changes were observed in clients' motivation, emotional well-being, and overall sense of well-being in physical activity. These findings highlight the importance of individualized training approaches and supportive environments in promoting physical and psychological benefits. Through the tailored training provided by Kuthmass Neurom, individuals with neurological conditions can achieve meaningful gains in their physical fitness and overall quality of life.

Significance

These results emphasize the value of adaptive fitness programs, addressing gaps often found in traditional gym settings. By prioritizing accessibility and individualized training programs like Kuthmass Neurom, we can help individuals with neurological conditions achieve their fitness goals and improve their overall health and well-being. These findings also highlight the need for more inclusive gym environments and the importance of ongoing research in this field. Physical fitness is a vital aspect of improving the quality of life for individuals with neurological conditions, and accessible options are essential for their participation.

Evaluation of Priorities: Novel Eating Disorder Prevention Program to Reduce Overvaluation of Weight and Shape in College Women
 Carlie Malott
 Department of Psychology, Colorado College

Background
 Eating disorders are common and often untreated, yet prevention efforts rarely consider core prevention may be one of the best ways to reduce risk before symptoms begin to occur.
 Group-based prevention may reach more at-risk students than treatment alone.
 The Body Project (group eating disorder intervention) program has shown benefits, but its theoretical focus may make it a broader risk factor.
 Overvaluation of weight and shape (OWS) is the belief that self-worth depends mostly on appearance.
 In OWS, appearance is the primary determining factor about how a man/girl of how they judge their value as a person.
 OWS may be a broader and more powerful risk factor than thin-ideal internalization since behaviors to feel more closely to how people desire their self-worth.
 Priorities was designed to target OWS by streamlining self-worth beyond appearance.
 Like the Body Project, in 4 group sessions and discussion. Like the Body Project, it focuses on personal empowerment. Activities focus on challenging appearance-based messages, incorporating strengths unrelated to looks, and clarifying values and priorities outside the body.

Introduction

Design and Measure
 7-weeks (1 intervention/1 control group) pre-post within randomized group.
 Baseline and post-test on same timeline, control received no program.
 Assess self-report measures: EDEQ, BASF, WBS, OWSQ-R, CES-D, CASI-3, PANAS-9.
 Reliability in this sample was good to excellent ($\alpha = .78$ to $.96$).

Procedures
 4 weekly screenings, consent, and baseline surveys.
 4 week-long intervention over 3 weeks.
 15 to 30 minute self-reflection between sessions.
 Conducted in a private room at the college by the author.
 Prerequisite administered immediately after Session 4.

Methods

Participants
 N = 28 female undergraduates, ages 18 to 22.
 M = 19.88, SD = 1.73.
 Intervention N = 16, control N = 12.
 Recruited via campus emails, introductory event, campus posters, and Wellness Center tabling.
 Intervention participants received a \$10 gift card for participation, control participants received a \$20 gift card for participation.

Workshop Content

- Session 1: creating community, introduction to OWS, and identifying strengths.
- Session 2: journal reflection & identifying individual and group priorities.
- Session 3: practicing self-worth activities & identifying individual and group priorities.
- Session 4: final self-reflection/feedback, finalized personal values, affirmations to continue reinforcing self-priorities.

Results

Single eating: increased in both groups, with a larger increase in the intervention group. $F(1, 16) = 5.10, p = .037$.

Appearance: decreased in both groups, with a larger decrease in the intervention group. $F(1, 16) = 5.12, p = .036$.

Negative emotions: decreased in the intervention group and slightly increased in the control group. $F(1, 16) = 3.80, p = .07$.

No significant interaction for shape/weight concerns, self-perceived happiness, anxiety, depression, negative effects of social media, or levels of self-worth.
 A adapted measures showed good to excellent internal consistency.

Conclusions

Strengths

- Small sample size
- Low attrition
- Some control settings
- Intervention program had no follow-up
- Experienced researchers
- Control & treatment in same department

Limitations

- Small sample size
- Low attrition
- Some control settings
- Intervention program had no follow-up
- Experienced researchers
- Control & treatment in same department

Discussion

These outcomes showed significant over a 4-week intervention. Single eating, appearance-based concerns, and negative emotions decreased in the treatment group while slightly increasing in the control group.
 Single eating increased in both groups.

Implications

The theoretical intervention was designed to reduce OWS through appearance-based self-affirmations and rejection of appearance-based social comparison. It may have been more effective because changes occurred in outcomes that do not rely on appearance and self-perceived happiness, other than in more subtle constructs.
 Participants may have less distress before they report greater gains in body satisfaction for each session.
 The post-test one right after Halloween is the biggest finding.
 Participants may have wanted more time to change eating behaviors since they had increased reporting since it was possible that eating behaviors were not immediately changed.

Future Directions

- Longer duration
- Single sessions
- Control program
- Follow-up
- Factor analysis of eating effects (e.g., Halloween)

Takeaway

Priorities showed preliminary promise in reducing appearance-based concerns and negative emotions and associated symptoms, but benefits were most noticeable in single sessions with follow-up.

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Unplugged and Restored: Reversing the Effects of Smartphone Use on Attention to Nature, Empathy, and Mindfulness



Gus Yar and [Co-author]
Department of Psychology

Introduction

Smartphones and heavy internet use have become ubiquitous, but their effects on attention, cognitive function, and mental health are still unclear. This study examines the effects of smartphone use on attention to nature, empathy, and mindfulness. Participants were assigned to either a control group (no smartphone use) or an experimental group (limited smartphone use). Results showed that the experimental group showed significantly higher scores on measures of attention to nature, empathy, and mindfulness compared to the control group.

Participants and Settings

Participants (N=100) were recruited from a local university. The study was conducted in a quiet room with natural light. Participants were randomly assigned to either the control group or the experimental group. The control group used their smartphones normally, while the experimental group used their smartphones only during breaks.

Procedure

Participants completed a baseline survey, followed by a 2-week intervention period. During the intervention, the experimental group used their smartphones only during breaks, while the control group used their smartphones normally. After the intervention, participants completed a follow-up survey.

Attention Restoration Theory (ART) (Kaplan et al., 2000)

ART is a theory of how people restore their attention through exposure to natural environments. It is based on four mechanisms: Being Present, Being Active, Being Involved, and Being Scenic. These mechanisms are thought to contribute to a state of attention restoration, which is characterized by increased attention to nature, empathy, and mindfulness.

Research Questions

RQ1: Is there a significant difference in attention to nature, empathy, and mindfulness between the control group and the experimental group?
RQ2: Does the experimental group show significantly higher scores on measures of attention to nature, empathy, and mindfulness compared to the control group?
RQ3: Are there any significant differences in the mechanisms of ART between the control group and the experimental group?



Selected References

Yar, G., & [Co-author]. (2023). Unplugged and Restored: Reversing the Effects of Smartphone Use on Attention to Nature, Empathy, and Mindfulness. *Journal of Environmental Psychology*, 100, 1-10.

Smartphone Use and Mindfulness

Department of Psychology

Smartphone Use and Mindfulness

Participants (N=100) were recruited from a local university. The study was conducted in a quiet room with natural light. Participants were randomly assigned to either the control group or the experimental group. The control group used their smartphones normally, while the experimental group used their smartphones only during breaks.

Procedure

Participants completed a baseline survey, followed by a 2-week intervention period. During the intervention, the experimental group used their smartphones only during breaks, while the control group used their smartphones normally. After the intervention, participants completed a follow-up survey.

Results

Participants in the experimental group showed significantly higher scores on measures of attention to nature, empathy, and mindfulness compared to the control group.

Conclusion

The results of this study suggest that limiting smartphone use during breaks can lead to increased attention to nature, empathy, and mindfulness.

References

Yar, G., & [Co-author]. (2023). Smartphone Use and Mindfulness. *Journal of Environmental Psychology*, 100, 1-10.

Contact

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LinkedIn: [LinkedIn Profile]

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Aesthetics and Athletics: An Arts Intervention for Female Youth Volleyball Players

Nyah Flores & Tomi-Ann Roberts, PhD
Colorado College Psychology Department



Background

Objectification Theory (Fredrickson & Roberts, 1997)

- Girls and women are sexually objectified culturally and personally.
- Women learn to self-objectify to survive and find success in male-dominated sports.
- Cognitive resources become depleted that could be engaged elsewhere.

Women & Sports

- Athletic sports (basketball, figure skating, volleyball) experience low rates of female sports participation (Adkins & Barber, 2011).
- Female athletes post more posed photos and make athletic gear more active photos on social media (Loeber, 2017).
- Existing research points to social media's body image and mental well-being (Loeber, 2017).

Study

• An art-making program aimed to help volleyball players understand their own experiences with body image and performance in sports.

Hypotheses

• Participants in the intervention group compared to the control group will show a **DECREASE** in self-objectification and a **DECREASE** in body image concerns.

• Participants in the intervention group compared to the control group will show an **INCREASE** in self-esteem and a **DECREASE** in body image concerns.

• Participants in the intervention group compared to the control group will show an **INCREASE** in body image satisfaction and a **DECREASE** in body image concerns.

• Participants in the intervention group compared to the control group will show an **INCREASE** in body image satisfaction and a **DECREASE** in body image concerns.

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Mark Making

The act of freely making marks on paper, a donor's need to look good by doing so.

Visual Thinking Strategies

What's going on here?
What do you see that makes you say that?
What are you thinking?

Intervention



Body Mapping

"This is something well in practice"
"You love a game"
"You make a mistake"
"You interact with your teammates"
"Visually express how these external experiences make you feel inside."

Methods/Survey

Participants

- 27 girls and young women
- Ages 14-22 with an average age of 18.22
- 100% White
- 20 at Colorado College
- 87% Caucasian, 10% Black, 13.9% Hispanic, and 14.8% Asian

Pre-Post Survey (All Participants)

Measurements: 1 Self-estimated amount when looking in the mirror
2 When I'm going through a very hard time, I give myself credit
3 I feel confident about myself when I look in the mirror
4 I feel confident about myself when I look in the mirror

Post-Survey (Intervention group only)

Empowered me to be a better volleyball player
Worked on my body image
Made me feel more confident
Made me feel more confident
Made me feel more confident
Made me feel more confident

Post-Survey (Intervention group only)

Empowered me to be a better volleyball player
Worked on my body image
Made me feel more confident
Made me feel more confident
Made me feel more confident
Made me feel more confident

Post-Survey (Intervention group only)

Empowered me to be a better volleyball player
Worked on my body image
Made me feel more confident
Made me feel more confident
Made me feel more confident
Made me feel more confident

Results

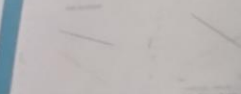


Figure 1: Self-estimated amount when looking in the mirror (M = 1.88, SD = 1.44) vs. when I'm going through a very hard time, I give myself credit (M = 1.88, SD = 1.44).

Change in Perspective about...

• I think that looking at other people's bodies was almost as if I was comparing myself to them and getting in other people's perspective as well.

• The body mapping activity helped me look at my feelings and how I can work on them.

• The body mapping activity continues to help me as a volleyball player because I want to be a better player and I know when I'm scared or shaky I can look at my body.

Strategies for the Future...

• I learned how to look at my own body and how to feel better about it.

• I learned how to look at my own body and how to feel better about it.

• I learned how to look at my own body and how to feel better about it.

• I learned how to look at my own body and how to feel better about it.

Adaptive Gym Training for Individuals with Neurological Conditions

Owen Simpson & Colorado College Department of Psychology

Abstract

The purpose of this study was to evaluate the effectiveness of an adaptive gym program for individuals with neurological conditions. The study involved a 12-week intervention and a follow-up assessment. The results showed that the program was effective in improving physical fitness and quality of life for participants.

Introduction

Individuals with neurological conditions often experience physical limitations that can affect their ability to engage in traditional gym activities. Adaptive gym training provides a safe and effective way for these individuals to stay active and improve their physical health. This study aimed to evaluate the effectiveness of an adaptive gym program for individuals with neurological conditions.

Client Interviews

A series of client interviews were conducted to gather feedback on the program. The interviews revealed that participants found the program to be enjoyable and beneficial. Some common themes from the interviews included:

- "The exercise routine has been the biggest improvement to me."
- "Going to the gym has been the highlight of my week."
- "I am able to exercise again - I'm not feeling frustrated."
- "Without your program, I don't know if I'd still be able to walk."
- "I've lost 100 lbs and I'm able to walk again!"

Conclusion

The results of this study indicate that an adaptive gym program is an effective intervention for individuals with neurological conditions. The program provided a safe and enjoyable environment for participants to exercise and improve their physical health. Further research is needed to explore the long-term effects of this program.

Photos



Hormonal Contraceptive Use and Dynamic Knee Valgus in Female Athletes After Unilateral ACL Reconstruction

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Abstract

ACL reconstruction is a common orthopedic procedure for athletes. However, the long-term effects of ACL reconstruction on knee joint health and function are still unclear. This study aims to investigate the relationship between hormonal contraceptive use and dynamic knee valgus in female athletes after unilateral ACL reconstruction.

Methods

Participants: 15 female athletes (10 ACL reconstructed, 5 controls) from Colorado College. All participants were competitive athletes and had a minimum of 1 year of ACL reconstruction or ACL intact.

Procedure: Participants performed a single-leg squat on a force plate. Kinematic data were collected using a motion capture system. Dynamic knee valgus was defined as the angle between the femoral and tibial axes.



Results

ACL reconstructed athletes showed significantly greater dynamic knee valgus compared to ACL intact athletes during the single-leg squat. This difference was more pronounced in athletes using hormonal contraceptives.

Conclusions

ACL reconstruction is associated with increased dynamic knee valgus, which may be exacerbated by hormonal contraceptive use. These findings suggest that athletes should be monitored for knee joint health and function after ACL reconstruction, particularly if they are using hormonal contraceptives.



Acknowledgements & References

Motor Control Asymmetry in Female Athletes with Unilateral ACL Reconstruction

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Results



Figure 1: Peak Angular Velocity

Figure 2: Peak Angular Acceleration

Figure 3: Asymmetry in the control

Methodology

Participants
Twenty female athletes (18-25 years old) with a unilateral ACL reconstruction (ACLR) were recruited from the Colorado College athletic department. All participants were screened for contraindications to exercise and provided informed consent. The study was approved by the Institutional Review Board at Colorado College.

Procedure
Participants performed a series of motor control tasks, including static and dynamic balance tests, using a force plate and motion capture system. The tasks were performed on a force plate (Kistler) with a motion capture system (VICON) to record joint angles and velocities. The tasks were performed in a randomized order and repeated three times for each condition.

Discussion

The present study found that female athletes with a unilateral ACL reconstruction exhibit motor control asymmetry, specifically in the control of angular velocity and acceleration. This asymmetry was observed in both static and dynamic balance tasks. The results suggest that the ACLR may lead to a loss of motor control symmetry, which could increase the risk of injury and affect performance. The findings have implications for rehabilitation and training programs for athletes with ACLR.



Figure 4: Asymmetry in the control

Acknowledgements & References

Unplugged and Restored: Reversing the Negative Effects of Smartphone Use on Attention to Nature, Empathic Connection, and Mindfulness

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Introduction

Smartphone use has become a ubiquitous part of daily life, and research has shown that excessive use can lead to negative psychological and behavioral outcomes. This study examines the effects of a 2-week smartphone detox on attention to nature, empathic connection, and mindfulness.

Method

Participants and Setting
College students at a midwestern US university, 100 total (50 in each group) participated in the study. The study was conducted during a 2-week period in the fall semester.

Procedure
Students were randomly assigned to either a 2-week smartphone detox group or a control group. The detox group was instructed to leave their smartphones at home for the duration of the study.

Time 2 Tech-Free Nature Restoration

After 4 weeks both time 1 and time 2 scores increased significantly. Significant increases were observed for attention to nature (AN) associated with PSU.

Outcome	Change	F(1,98)	p	η^2
Nature Connectedness	↑ Increased	4.02	.049	.14
Empathic Concern	↑ Increased	6.07	.020	.18
Personal Distress	↓ Decreased	4.53	.042	.14

Counselor Experience Trend

Restoring Connections: Greater restoration across all three domains. Liberty and/or with greater restoration. Deviation from these ratings suggests that being unplugged use and had established restoration resulted in a similar rating.

Free-Form Descriptions: Greater restoration effects. Environmentality and attachment diversity may have caused attention recovery during the restoration period.

Discussion

PSU increased scores across all domains, suggesting that at a 2017 level, attention to nature, empathic connection, and mindfulness were significantly affected by smartphone use. These trends suggest that smartphone use is associated with decreased attention to nature, empathic connection, and mindfulness. The findings suggest that smartphone use is associated with decreased attention to nature, empathic connection, and mindfulness. The findings suggest that smartphone use is associated with decreased attention to nature, empathic connection, and mindfulness.

Implications & Future Directions

• **College:** Tech-free zones on campus during transitions to improve the student experience. Digital detox retreats to improve attention to nature, empathic connection, and mindfulness.

• **Community:** Nature connection as a life skill – how can we bring this skill to our communities?

• **Family:** Reduce screen time in primary school – could make screen a priority.

Time 1 Correlations

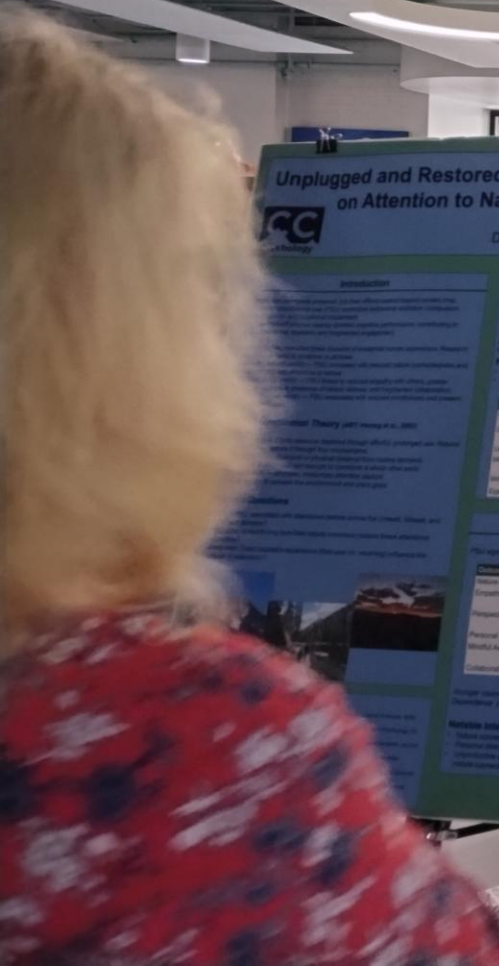
Time 1 significantly correlated attention to nature scores at Time 2 (see table).

Outcome	Direction	r	p
Nature Connectedness	↑ Lower correlation	-.25	.037
Empathic Concern	↑ Less correlation for others	-.02	.937
Personal Distress	↓ Less able to adapt others' stress	-.37	.002
Personal Distress	↓ More self-focused anxiety	-.38	.001
Personal Distress	↓ Less (prevention) control	-.37	.002
Collaboration Skills	↑ Greater teamwork	-.23	.050

Time 2 Correlations

Time 2 significantly correlated attention to nature scores at Time 2 (see table).

Outcome	Direction	r	p
Nature Connectedness	↑ Lower correlation	-.25	.037
Empathic Concern	↑ Less correlation for others	-.02	.937
Personal Distress	↓ Less able to adapt others' stress	-.37	.002
Personal Distress	↓ More self-focused anxiety	-.38	.001
Personal Distress	↓ Less (prevention) control	-.37	.002
Collaboration Skills	↑ Greater teamwork	-.23	.050



Gym Training for Individuals with Neurological Conditions

Owen Simpson & Colorado College Department of Psychology



Introduction

Individuals with neurological conditions represent a major portion (43%) of the total global population, over 3 billion people worldwide (Steinmetz, J. D., Seeher, K. M., Schiess, N., et al. 2021). These conditions include disorders such as stroke, Parkinson's disease, multiple sclerosis, cerebral palsy, and traumatic brain injury. These often result in motor, cognitive, and sensory impairments which may reduce coordination, muscle weakness, impaired balance, fatigue, and can alter sensory processing. These conditions may significantly limit daily independence and participation in physical fitness (Billinger et al., 2014; Farrell, Merkas, & Pilutti, 2020; Winstein et al., 2016).

Regular physical activity is a critical component of rehabilitation and long-term health for individuals with neurological conditions. Exercise improves strength, mobility, cardiovascular health, and functional recovery, while promoting neuroplasticity (Billinger et al., 2014; Colman et al., 2007; Lai et al., 2019). It is also associated with improved mental health and quality of life (Pedersen & Saltin, 2015). Individualized training approaches are particularly effective in supporting functional gains (Winstein et al., 2016).

Despite these benefits, there are still significant barriers for participation in physical activity. Traditional gym environments often lack adaptive equipment, accessible layouts, and adequately trained staff, creating both physical and psychological obstacles (Rimmer & Marques, 2012; Rimmer et al., 2004). Consequently, individuals with disabilities are less likely to meet physical activity guidelines, increasing the risk of secondary health complications (Carroll et al., 2014; Rimmer & Marques, 2012).

Neurologically adaptive fitness programs could be a promising solution, emphasizing individualized training, equipment modifications, and supportive coaching strategies. By addressing both environmental and personal barriers, these programs may improve adherence, functional outcomes, and overall quality of life (Lai et al., 2019; Pedersen & Saltin, 2015).

This study examines how Kutthaus Neuro, a neurologically adaptive fitness program in Grand Junction, Colorado, addresses these challenges.

Conclusion

What we learned:

I found that neurologically adaptive fitness programs lead to improvements across a wide range of physical outcomes, including strength, mobility, and coordination. Every client who was asked reported a better control of their symptoms across the board and general improvements in other health metrics. However, the most significant changes were observed in clients' motivation, emotional well-being, and overall drive. Many participants reported increased confidence, greater independence, and a more positive outlook on their ability to engage in physical activity. These findings highlight the importance of individualized training approaches and supportive environments in promoting both physical and psychological benefits. Through the techniques adopted by Kutthaus, I learned that maintaining good physical fitness is still possible despite all the obstacles certain neurological conditions impose.

Significance:

These results emphasize the value of adaptive fitness programs, addressing gaps within traditional exercise settings. By prioritizing accessibility and individualized training, programs like Kutthaus Neuro can improve not only physical health but also long-term engagement and quality of life for individuals with neurological conditions. Expanding access to such programs may play a critical role in making more inclusive traditional gyms more accessible via health outcomes in neurologically diverse populations. Also making more traditional gyms more accessible via redesigned machines/layout and better trained employees could also help get more individuals with neurological conditions involved in physical fitness. Physical fitness is a crucial aspect in maintaining the best quality of life for all people, and accessibility shouldn't impact participation.

Client Interviews

A total of 6 clients were interviewed. Here are some important points from my interviews:

- "The mental health benefits have been the biggest improvements for me"
- "Going to the gym helps me remember to get out of the house"
- "I am able to step up stairs again... I've not falling anymore"
- "Without them [Kutthaus], I don't know if I will be able to walk"
- "I ran out of PT and this was my only shot"

Photos



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Validation in Total Phobic Conditions

Introduction

Results

Evaluation of Priorities: Novel Eating Disorder Prevention Program to Reduce Overvaluation of Weight and Shape in College Women

Carlie Malott

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Introduction
 Anorexia nervosa (AN) and bulimia nervosa (BN) are common eating disorders, often associated with overvaluation of weight and shape. Research shows that overvaluation of weight and shape is a key feature of these disorders. The current study aims to evaluate the effectiveness of a novel prevention program designed to reduce overvaluation of weight and shape in college women.

Participants
 n = 25 female undergraduates, ages 18 to 22
 M = 18.85, SD = 1.12
 Intervention = n = 12, waitlist control = n = 13
 Recruitment via social media, psychology email lists, campus posters, and Student Center bulletin boards.
 Intervention participants received a \$25 gift card for participation while waitlist participants received a \$25 gift card for participation.

Design and Measures
 The study (interventional/prevention) pre-post waitlist-control design.
 Baseline and post-test on same timeline. Controls received waitlist (no intervention).
 EDOS, BASS, BISS-R, DEBO, R, COK, GAD-7, PANAS-2.
 Feasibility in this sample was good to excellent (n = 78 to 85).

Results
 Significant reduction for overvaluation of weight and shape, and decreased internal consistency, negative effects of social media, and levels of self-worth.
 Addressed measure showed good to excellent internal consistency.

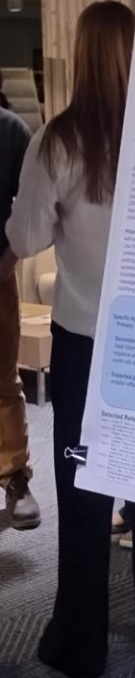
Methods
Workshop Content
 Session 1: creating community, introduction to OWS, and identifying strengths
 Session 2: journal reflection & thin-ideal rebuttal workshop
 Session 3: practicing self-worth affirmation & identifying red flags and group priorities
 Session 4: final reflections/feedback, broader social outlooks, affirmation to continue reaffirming self-priorities



Conclusion
Strengths
 • Waitlist-control comparison
 • Same campus setting
 • Immediate post-test only
 • Established measures
 • Good to excellent internal consistency
Limitations
 • Small sample size
 • 2-week intervention
 • Immediate post-test only
 • No follow up data
 • Only with women
Discussion
 • Three outcomes showed significant time x group interaction: binge eating, anorexia/dieting symptoms, and negative emotions.
 • Anorexia/dieting symptoms and negative emotions decreased in the treatment group while slightly increasing in the control group.
 • Binge eating increased in both groups
Interpretation
 • The Priorities curriculum was designed to reduce OWS through cognitive dissonance, self-affirmation, and disruption of appearance-based social comparison strategies.
 • That focus may help explain why the clearest changes appeared in outcomes tied to day-to-day distress and dieting-oriented thinking, rather than more stable constructs.
 • Participants may feel less distress before they report broader gains in body satisfaction or self-worth.
 • Increased in binge eating could be explained by eating triggers.
 • The post-test was right after Halloween (a big binge eating episode which may have increased reporting even if episodes did not meaningfully worsen).

Future Directions
 • Larger sample
 • Longer follow-up
 • Delayed post-test
 • Better control of timing effects (e.g. Halloween)

Takeway
 Priorities showed preliminary short-term effects on negative symptoms and anorexia/dieting symptoms, but findings were mixed and need replication in a larger sample with follow-up.



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