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The effect of training 5% lighter on strength and power in collegiate football athletes

Submission date	**Recruitment status**	[X] Prospectively registered
02/01/2018	No longer recruiting	[ ] Protocol
Registration date	**Overall study status**	[ ] Statistical analysis plan
11/01/2018	Completed	[ ] Results
Last Edited	**Condition category**	[ ] Individual participant data
21/02/2018	Other	[ ] Record updated in last year

Plain English summary of protocol

Background and study aims
It is common for athletes to lift weights to improve performance. Recently, there is evidence to suggest that training light can be an effective alternative to training heavy. However, little research has been done to establish what effects a small drop in weight could have on strength improvement in collegiate football players. The aim of this study is to investigate the effect of collegiate football athletes training with 5% lighter weights over 12 weeks on three main exercises: bench press, back squat and power clean.

Who can participate?
Male collegiate football athletes who are at least 18 years old and have a minimum of one year of strength and conditioning experience in a University setting

What does the study involve?
The study involves pre testing of athletes lifting the most they can lift in 1 repetition for the bench press, back squat and power clean. They are then randomly allocated to a group that trains at an average of either 80% or 75% of that 1 repetition maximum over 12 weeks. They strength train three times a week for 12 weeks, with each training session lasting 75 minutes. All athletes train on the same training program, except for lifting different intensity weights on their main exercises. The program is provided by an accredited strength and conditioning coach and is planned out to vary over the course of the study. At the end of the 12 weeks, the athletes re-attempt their 1 repetition maximum in the main lifts. Both pre and post testing are structured in order to make sure the results are reliable.

What are the possible benefits and risks of participating?
The benefit of this study is that participants will likely get stronger and more powerful, regardless of which group they're assigned to. Their participation will result in more information being available to strength coaches and trainers about the appropriate dose of weight to be prescribed. The risks of this study include: soreness, fatigue, and injury. However, these risks are no greater than what they would be exposed to if they didn't participate in this study since they will be strength training as part of their off-season training plan.

Where is the study run from?
The study is being run from the Stevens High Performance Centre, within the Acadia Athletics Complex, on the campus of Acadia University, in Wolfville, Nova Scotia, Canada.

When is the study starting and how long is it expected to run for?
January 2018 to April 2018

Who is funding the study?
Investigator initiated and funded

Who is the main contact?
Elliott Richardson
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Contact information

Type(s)
Public

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Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers
156283

Study information

Scientific Title
The effect of training 5% lighter on strength and power in collegiate football athletes: a randomised controlled trial

Study objectives
The hypothesis of the study is that there will be no meaningful difference in strength and power improvement by training at 5% lighter for 12 weeks.

Ethics approval required
Old ethics approval format

Ethics approval(s)
St. Mary's University - Twickenham London, 12/01/2018, ref: SMEC_2017-18_062

Study design
Single-centre randomised controlled trial

Primary study design
Interventional

Secondary study design
Randomised controlled trial

Study setting(s)
School

Study type(s)
Other

Participant information sheet
Not available in web format, please use the contact details to request a patient information sheet

Health condition(s) or problem(s) studied
Strength and power for athletes

Interventions
Collegiate football athletes will be match paired based on position group and strength level and then be randomly assigned to a group that trains at an average intensity of either 75% or 80% of 1 repetition maximum for the 12-week training. The programs will be identical except for the training intensity for the key exercises: back squat, bench press, power clean. They will train 3 times per week for 75 minutes per training session.

Intervention Type
Behavioural

Primary outcome measure
Strength and power in three key exercises (bench press, back squat, and power clean) at baseline and 12 weeks

Secondary outcome measures
There are no secondary outcome measures

Overall study start date
12/01/2018

Completion date
10/04/2018

Eligibility

Key inclusion criteria
1. Male university varsity football athletes
2. At least a year of strength training experience in university setting
3. Free from injury that would limit participation in exercises
4. Volunteer to participate

Participant type(s)
Healthy volunteer

Age group
Adult

Sex
Male

Target number of participants
50

Key exclusion criteria
1. Choose not to participate
2. Have injury that limits their ability to train key exercises
3. Not member of Acadia Axemen varsity football team

Date of first enrolment
11/01/2018

Date of final enrolment
11/01/2018

Locations

Countries of recruitment
Canada

Study participating centre
Acadia Athletics Complex
550 Main Street
Wolfville
Canada
B4P 2R6

Sponsor information

Organisation
St. Mary's University

Sponsor details
Waldegrave Road
Twickenham
England
United Kingdom
TW1 4SX

Sponsor type
University/education

ROR
https://ror.org/0067fqk38

Funder(s)

Funder type
Other

Funder Name
Investigator initiated and funded

Results and Publications

Publication and dissemination plan
Planned publication in a high impact journal (likely the Journal of Strength and Conditioning Research).

Intention to publish date
10/04/2019

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study are/will be available upon request from Elliott Richardson (elliott.richardson5@gmail.com) and Dr Daniel Cleather (daniel.cleather@stmarys.ac.uk). The data will be held on the St. Mary's University campus server from the date after collection for a period of ten years. The client information sheets will be stored include their attempts of a maximal lift attempt for power clean, bench press, and squat, both pre and post testing of their training program. They will be stored in Word and Excel formats, with a statistical analysis by SPSS being completed to determine statistical difference between intervention groups. Each participant will be assigned a control number to keep anonymity and privacy. Results of radomization will be stored as well. Consent forms will be obtained and stored as well. Participants will have approved to have data stored.

IPD sharing plan summary

Available on request