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APPENDIX A: INFORMATION LETTER



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville, 7535, South Africa

Tel: +27 21-959 2409 Fax: 27 21-959 3688

E-mail: 3405618@myuwc.ac.za

INFORMATION SHEET

Project Title: Prevalence of Coronary Artery Disease Risk Factors in Firefighters in the City of Cape Town Fire and Rescue Service

Dear Participant,

Introduction

This is an invitation for you to participate in a scientific study. This information sheet will help you to decide whether or not you would like to participate in this study. Before you decide to participate it is required for you to fully understand what is involved in this study. If there are any questions regarding this study that this sheet cannot explain to you, please feel free to ask the interviewer the questions.

What is this study about?

This is a research project being conducted by Jaron Ras from the University of the Western Cape. We are inviting you to participate in this research project in order to establish your current possible coronary artery disease (CAD) risk factors. This will give an indication of the areas you need to focus on in order to improve your future results, as well as contribute to research which could benefit other firefighters in future, when looking at common trends regarding CAD risk factors amongst firefighters.

What will I be asked to do if I agree to participate?

You will be asked to complete a consent form before any information or data is recorded. Participation may range from filling in a questionnaire to participating in a CAD risk assessment in order to gather the relevant information. This will be done in a private area within the relevant fire stations for the convenience of those on duty. The duration of each assessment may be varied, however, this will be established and communicated to you. Questions you will complete will include information about cigarette smoking, family history of heart disease, age, ethnicity and gender. CAD risk assessments will include measuring resting blood pressure (BP), fasting glucose, total cholesterol, waist, hip, height and weight.

Would my participation in this study be kept confidential?

All your personal information will be kept strictly confidential. To help protect your confidentiality, we will have all assessments done in a secure, private location within the comfort of the fire station. All recorded data will be kept confidential by replacing your name with numeric codes, and saving the information within a private folder which will be reviewed only by the researcher and supervisor of this research project. If we write a report or article about this research project, your identity will be protected.

What are the risks of this research?

There may be some risks from participating in this research study. Much like any activity or assessment, there are risks which can be described as both expected and unexpected. Possible expected risks of an emotional and psychological nature may include feeling self-conscious, embarrassed or anxious, due to having fears of possible negative outcomes. Unexpected risks include physical aspects, such as increased heart rate and blood pressure and discomfort during assessments. Risks associated with finger prick blood sampling, such as transferring viruses from one person to another will be prevented by using gloves when administering blood samples and using an experienced researcher who will adhere to the universal precautions of safety.

What are the benefits of this research?

The benefits to you include personal enrichment and awareness of your current risk stratification. As a firefighter you will be able to establish which areas of your lifestyle need to be altered in order to maintain your health and well-being, as well as improve your results in future health assessments.

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.

Is any assistance available if I am negatively affected by participating in this study?

If any negative effects of a severe nature occur, medical support will be contacted. Emergency care will be taken by the researcher who is a qualified first aider (Level 3) to support you until medical support arrives.

What if I have questions?

This research is being conducted by Jaron Ras from the University of the Western Cape. If you have any questions about the research study itself, please contact Jaron Ras on 3405618@myuwc.ac.za

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Head of Department: Dr Marie Young
University of the Western Cape
Private Bag X17
Bellville, 7535
Email: myoung@uwc.ac.za

Dean CHS: Prof Anthea Rhoda
Faculty of Community and Health Sciences
University of the Western Cape
Private Bag X17
Bellville, 7535
Email: chs-deansoffice@uwc.ac.za

This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee.

University of the Western Cape
Private Bag X17
Bellville, 7535
Tel: 021 959 4111
e-mail: research-ethics@uwc.ac.za

APPENDIX B: CONSENT FORM



UNIVERSITY OF THE WESTERN CAPE
Private Bag X 17, Bellville, 7535, South Africa

Tel: +27 21-959 2409 Fax: 27 21-959 3688

E-mail: 3405618@myuwc.ac.za

CONSENT FORM

**Title of the Research Project: Prevalence of Coronary Artery Disease Risk Factors
in Firefighters in the City of Cape Town Fire and
Rescue Service**

The study has been described to me in language that I understand and I freely and voluntarily agree to participate. My questions about the study have been answered. I understand that my identity will not be disclosed and that I may withdraw from the study without giving a reason at any time and this will not negatively affect me in any way.

Participant's name:

Participant's signature:

Date:

APPENDIX C: DATA RECORDING SHEET



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville, 7535, South Africa

Tel: +27 21-959 2409 Fax: 27 21-959 3688

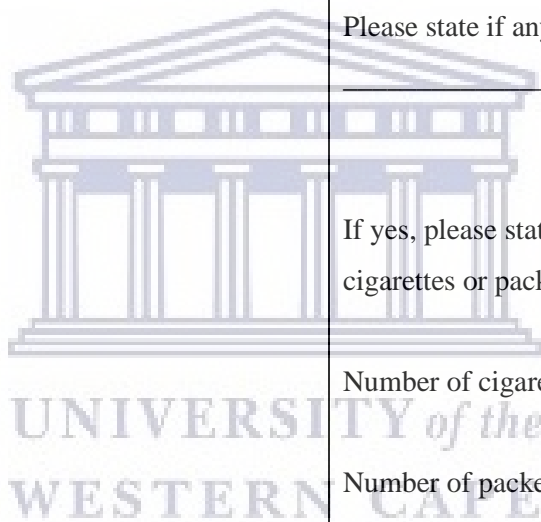
E-mail: 3405618@myuwc.ac.za

Project Title: Prevalence of Coronary Artery Disease Risk Factors in Firefighters in the City of Cape Town fire and Rescue Service

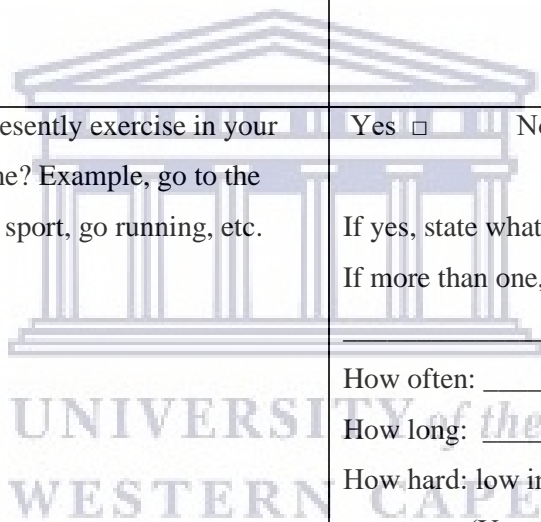
Data Recording Sheet

Participant Information	Alpha-numeric code	
	Ethnicity (B, C, I, W)	
	Sex (Male=1, female=2). Indicate with a number	
	Date of Birth	
Do you have any past or present medical conditions?		
Medical Information	1. Are you currently taking any medication?	Yes <input type="checkbox"/> No <input type="checkbox"/> Please state if any: _____
	2. Do you have a family history of heart disease? [i.e., myocardial infarction, coronary revascularization or sudden death before 55 years in father or other male first-degree relative (i.e., brother or son) or before 65 years in	Yes <input type="checkbox"/> No <input type="checkbox"/> Please state if any: _____

	mother or other female first-degree relative (i.e., sister or daughter)]	
	3. Do you presently have any physical (orthopaedic) injuries?	Yes <input type="checkbox"/> No <input type="checkbox"/> Please state if any: _____
	4. If you answered positively in question 3 above, are you currently receiving treatment for the physical injuries?	Yes <input type="checkbox"/> No <input type="checkbox"/> Please state if any State: _____
	5. Do you currently smoke cigarettes, or any other recreational substance?	Yes <input type="checkbox"/> No <input type="checkbox"/> Please state if any State: _____ If yes, please state the average number of cigarettes or packets you smoke per day: Number of cigarettes: _____ per day or Number of packets: _____ per day.
Lifestyle Information	6. For previous cigarette smokers, if you currently do not smoke, have you quit in the last 6 months?	Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable <input type="checkbox"/> State: _____
	7. Do you currently drink alcohol?	Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, please state the common type(s) and average number of drinks you consume: Type(s) of Alcohol: _____

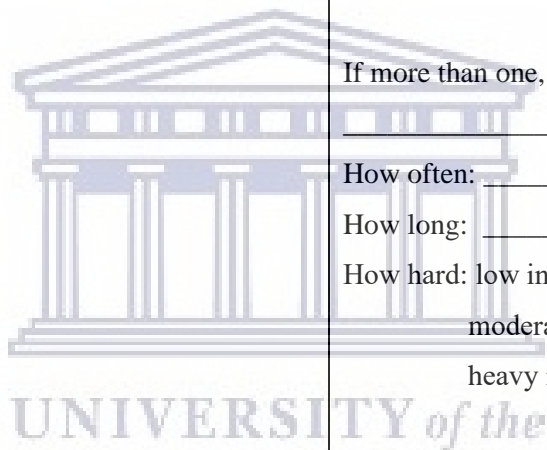


	<p>Number of Drinks: _____ per day or (e.g., 1 can of beer) _____ per week or _____ per month</p>
<p>8. Do you currently take any other drugs?</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If yes, please state the type(s) and average number of drugs you consume:</p> <p>Type(s) of Drug(s): _____</p> <p>Number of Drugs: _____ per day or _____ per week or _____ per month</p>
<p>9. Do you presently exercise in your leisure time? Example, go to the gym, play sport, go running, etc.</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If yes, state what you do: _____</p> <p>If more than one, state all of them. _____</p> <p>How often: _____ days per week</p> <p>How long: _____ minutes per day</p> <p>How hard: low intensity <input type="checkbox"/> (You don't sweat)</p> <p>moderate intensity <input type="checkbox"/> (You sweat lightly)</p> <p>heavy intensity: <input type="checkbox"/> (You sweat heavily)</p> <p>If more than one, state the others below: _____</p> <p>How often: _____ days per week</p> <p>How long: _____ minutes per day</p> <p>How hard: low intensity <input type="checkbox"/> moderate intensity <input type="checkbox"/> heavy intensity: <input type="checkbox"/></p>



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<p>10. Do you presently participate in yard or gardening activities</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If yes, state what you do: _____</p> <p>If more than one, state all of them.</p> <p>_____</p> <p>How often: _____ days per week</p> <p>How long: _____ minutes per day</p> <p>How hard: low intensity <input type="checkbox"/> (You don't sweat)</p> <p>moderate intensity <input type="checkbox"/> (You sweat lightly)</p> <p>heavy intensity: <input type="checkbox"/> (You sweat heavily)</p> <p>If more than one, state the others below:</p> <p>_____</p> <p>How often: _____ days per week</p> <p>How long: _____ minutes per day</p> <p>How hard: low intensity <input type="checkbox"/> moderate intensity <input type="checkbox"/> heavy intensity: <input type="checkbox"/></p>
<p>11. Does your occupation require high amounts of physical activity? E.g. standing for long periods, walking continuously, heavy lifting etc.</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If yes, state what you do: _____</p> <p>If more than one, state all of them.</p> <p>_____</p> <p>How often: _____ days per week</p> <p>How long: _____ minutes per day</p> <p>How hard: low intensity <input type="checkbox"/> (You don't sweat)</p> <p>moderate intensity <input type="checkbox"/> (You sweat lightly)</p> <p>heavy intensity: <input type="checkbox"/> (You sweat heavily)</p>



	<p>If more than one, state the others below:</p> <p>_____</p> <p>How often: _____ days per week</p> <p>How long: _____ minutes per day</p> <p>How hard: low intensity <input type="checkbox"/></p> <p> moderate intensity <input type="checkbox"/></p> <p> heavy intensity: <input type="checkbox"/></p>
<p>12. How many minutes (If any) transportation related physical activity do you do?</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If yes, state what you do: _____</p> <p>If more than one, state all of them.</p> <p>_____</p> <p>How often: _____ days per week</p> <p>How long: _____ minutes per day</p> <p>How hard: low intensity <input type="checkbox"/></p> <p> (You don't sweat)</p> <p> moderate intensity <input type="checkbox"/></p> <p> (You sweat lightly)</p> <p> heavy intensity: <input type="checkbox"/></p> <p> (You sweat heavily)</p> <p>If more than one, state the others below:</p> <p>_____</p> <p>How often: _____ days per week</p> <p>How long: _____ minutes per day</p> <p>How hard: low intensity <input type="checkbox"/></p> <p> moderate intensity <input type="checkbox"/></p> <p> heavy intensity: <input type="checkbox"/></p>

13. Total minutes of physical activity per week?	Low intensity: _____ Moderate intensity: _____ High Intensity: _____ Average minutes of exercise per week: _____
--	--

TEST DATA

Date of Measurement: _____ Time of Measurement: _____ h	
---	--

Measurements	Measure	Measure	Measure	Final
	1	2	3	Measure
Body mass (kg)				
Stretch stature (cm)				
Waist girth (min.) (cm)				
Hip girth (max.) (cm)				
Systolic Blood Pressure (mm Hg)				
Diastolic Blood Pressure (mm Hg)				

Non-Fasting Glucose (mmol•L ⁻¹)				
Total Cholesterol (mmol•L ⁻¹)				



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WESTERN CAPE

APPENDIX D: LETTER OF PERMISSION TO THE CITY OF CAPE TOWN

13 June 2019

Ms Jameyah Armien
Organisational Research Branch
City of Cape Town

Dear Ms Armien

Re: UWC Research with the CCT Fire and Rescue Service

This letter pertains to the request for permission to conduct research in the City of Cape Town (CCT) Fire and Rescue Service.

The following information or documents are submitted as requested by the City of Cape Town, namely:

1. An approved research proposal that includes:
 - a. The research title and topic, a concise description of the research project, and the research purpose and focus.
 - b. The research partners or organisations involved in the research:
The research partners are the CCT Fire and Rescue Service and the Department of Sport, Recreation and Exercise Science, UWC.
 - c. A short summary of the literature and research framework.

A brief review of the literature related to the research on firefighters is contained in the research proposal (refer to pages 5 – 9), as well as the research framework (refer to page 5).

- d. Details of the research methodology (including sampling, research questionnaire, intended analysis and management of the data post the research).
- e. A high-level research plan with timeframes and expected final research completion date.

This information is also contained in the research proposal (refer to page 32).

2. A letter or document related to the research ethics pertaining to the research.

This is contained in the Ethical Considerations stated in the proposal (refer to pages 12-13), and attached is an ethics clearance letter from the Biomedical Research Ethics Committee at the University of the Western Cape.

3. Full details of how the research and information is planned to be used:

The research will be used primarily for degree purposes of Mr Ras and other students who will be conducting research on firefighters. Mr J Ras

(student number: 3405618) is currently registered for an MSc degree in Biokinetics in our department at UWC. The intention is to use the information to positively impact the health and wellness of firefighters in the City of Cape Town. Hopefully, the outcome of this research will help influence the overall firefighters' fitness-for-duty, and be protective on both the firefighters on duty, as well as the broader public who will be provided with quality service by the fire department that can ensure the safety of public lives and minimise the damage to property, as a result of the fire emergency. The research is also intended to help reduce the risk of injuries in firefighters, as well as minimise the likelihood of them sustaining life-threatening cardiovascular events both on and off duty. In addition, the intention is to have the research presented at national and international conferences, as well as published in peer-reviewed and accredited journals in order to disseminate the information to others who can benefit from the information both locally and internationally.

Our department and I, specifically, have a long history with the City of Cape Town Fire and Rescue Service that goes as far back as 1992, when we assisted in the health and wellness programme of the Bellville Fire Department under the Fire Station Commander Mr Cyprian Cairncross.

Since then, I have worked with the Fire Station Commander, Mr Mark Smith, in establishing health-related physical fitness testing protocols for firefighters in order to ensure that they are fit-for-duty, and remain so throughout their career. Currently, I serve on an Advisory Task Team to the

Fire and Rescue Service together with other health practitioners, such as Dr Brynt Cloete, who advise the Chief Fire Officer on the medical and physical fitness testing of firefighters that is intended to become a standardised annual programme and policy.

Our department has also been involved in the Toughest Firefighter Alive South Africa (TFASA) competition in advising competing firefighters on their preparation and training for the competition. This relationship is still in operation for the competition this year in September. The intention is for Cape

Town to produce the toughest firefighters at the competition, who will then represent us at the international competition.

Our department is also involved in other research with the City of Cape Town, such as the Western Cape on Wellness (WoW) Project that is intended to positively impact the health and wellness of all municipal departments and staff. The project has been operating for the past five years, and includes a substantial amount of research that is conducted by the various universities in the Cape Peninsula.

Our primary intention with this project is to establish quality support and research with the City of Cape Town Fire and Rescue Service that will extend well into the future. We would like our university to be the institution of choice for all research related to the Fire Service that will hopefully establish them as the best unit in the country, and Cape Town as the healthiest city.

4. Full details of what is specifically requested from the City of Cape Town for the research, including data, information, documents and the identification of potential CCT participants and how these are anticipated to be accessed.

We would like the City of Cape Town to grant permission in writing for the research to be conducted amongst the firefighters in the City of Cape Town. Once permission has been granted by the City of Cape Town for the research to be conducted, this information will then be communicated to all the Fire Station Commanders and firefighters through the Office of the Divisional Commander, Mr Ian Bell. All the necessary research information and documents, such as the study information letter, consent form, and questionnaires, will be issued in hardcopy format by the researchers to the relevant Station Commanders and firefighters in person. Arrangements will be made with the Station Commanders to communicate the information and details of the study to the firefighters both verbally and in writing. All firefighters will be informed that their participation in the study is voluntary, and should they choose to participate, they can stop participating or withdraw at any stage without any negative consequences. All measurements will be taken at the individual fire stations in Cape Town. Access to the firefighters will depend on the instructions of the Station Commanders and the availability of the firefighters when on or off duty. Understandably, if the firefighters are tested when on duty, all testing will stop immediately in the presence of an emergency call to the fire station. The testing will then resume on another occasion that is convenient for the firefighters.

5. Full details of the expected impact on time for potential participants:

Measurement of the CAD risk factors will take a maximum of 30 minutes per firefighter in order to complete all the information required. The written information will comprise the firefighters' age, gender, race, family history of heart disease, history of cigarette smoking, and physical activity habits. The physical measurements will comprise measuring blood pressure, blood cholesterol, fasting blood glucose, height, weight and waist and hips circumferences.

6. The time period during which the research is planned to be conducted in the City of Cape Town:

This research study by Mr Jaron Ras is planned to take place from July to December 2019.

7. Details on any planned publishing of the research (name of publication and timeframes):

The research is planned to be published in peer-reviewed and the Department of Higher education and Training (DHET) accredited journals, such as Health SA and Occupational Health Southern Africa. The papers are planned for submission for January – March 2020 and final publications in July – December 2020 (refer to the research proposal, page 32).

Because the research is used for academic purposes, the following documents were also requested by CCT, and are attached:

- Proof of current registration of the student at a Tertiary Institution. □ A letter from the main supervisor confirming the candidate's requirement to undertake the research and details of the relevant course or study.
- A letter from the Tertiary Institution's Ethics Committee or similar equivalent, indicating approval of the research subject, topic and proposal.

This research study by Mr Jaron Ras is intended to be the first of many projects which we intended conducting with the CCT Fire and Rescue Service. Additional studies that are currently being submitted to the Biomedical Research Ethics Committee, UWC, that are intended for implementation from July – December 2019 are the following, namely:

Mr Mathew Brooks (SN: 3043555): Relationship between health-related physical fitness and functional occupational fitness of firefighters in the City of Cape Town Fire and Rescue Service. MSc Degree in Biokinetics.

Ms Gabriella Santos (SN: 3451042): The prevalence and risk factors of work-related musculoskeletal disorders in firefighters in the City of Cape Town Fire and Rescue Service. MSc Degree in Biokinetics.

Mr Ghaleelullah Achmat (SN: 2542036): The impact of a multiple health intervention strategy on the coronary heart disease risk factors, health-risk behaviours, health-related physical fitness levels, functional occupational fitness, and musculoskeletal disorders in municipal firefighters. PhD degree.

This is an intervention study that is likely to extend from July 2019 to December 2020.

The relevant information for each of the above three studies, i.e., research proposals, ethics clearance letters, and proofs of registration, will be made available to CCT, once these studies have been approved by the Biomedical Research Ethics Committee, UWC.

I hope that the information supplied is sufficiently informative and appropriate. Nevertheless, I am willing to provide any additional information, as may be requested by the City of Cape Town in order to support our request.

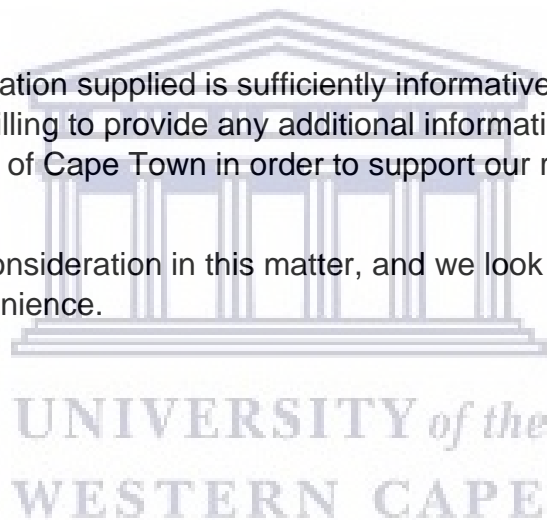
Thank you for your consideration in this matter, and we look forward to your reply at your earliest convenience.

Yours sincerely



Prof L Leach

Research Supervisor





Date : 26 August 2019
 To : DIRECTOR: POLICY & STRATEGY
 Reference : PSRR-0148

Research Approval Request

In terms of the City of Cape Town System of Delegations (March 2019) - Part 29, No 1 Subsection 4, 5 and 6
 "Research:

- (4) To consider any request for the commissioning of an organizational wide research report in the City and to approve or refuse such a request.
- (5) To grant authority to external parties that wish to conduct research within the City of Cape Town and/or publish the results thereof.
- (6) To offer consultation with the relevant Executive Director, grant permission to employees of the City of Cape Town to conduct research, surveys etc. related to their studies, within the relevant directorate

The Director: Policy & Strategy is hereby requested to consider, in terms of sub-section 5, the request received from

Name	: Jaron Ras
Designation	: Masters candidate
Affiliation	: University of the Western Cape (UWC)
Research Title	: Prevalence of Coronary Artery Disease Risk Factors in Firefighters in the City of Cape Town

Taking into account the recommendations below (see Annexure for detailed review):

<p>Recommendations</p> <p>That the CCT Director: Policy & Strategy grants permission to Jaron Ras in his capacity as a MSc Biokinetics Master's candidate at the University of the Western Cape, to conduct research in the City of Cape Town, subject to the following conditions:</p> <ul style="list-style-type: none"> • Engagement for CCT staff participation selection should only be via The Chief Fire Officer – Ian Schmitter; • Pre-arranged dates and times of station or personnel visits to be advised regularly to the Office of the Chief Fire Officer; • There is to be no disruption of service at any stage of the research and the researcher is not to impact or interfere with the CCT Fire Services or the Fire personnel during the course of all aspects of the research; • CCT officials to sign an undertaking stating that they are participating in a voluntary capacity and agreeing to the use of the study 'tools' and Tests before participation takes place; • The willingness and/or availability of individual CCT firefighter staff to participate in the research, in a voluntary capacity; • Adherence to the scope and scale of the study as proposed – a maximum of 120 CCT fire fighters; • Clear acknowledgement in the report that respondents' views and inputs are not regarded as official policy of their respective institutions; • Data collection only to be done by the researcher (Jaron Ras) or his academic supervisor (Prof Lloyd Leach); • All research and related information is to be treated with the strictest confidentiality; • The researcher to provide one debriefing session with each participant; • Anonymising of the City name and its officials and their responses; • Use of the City's logo or brand is not permitted; • Submission of the pre final results and report to The Chief Fire Officer, for verification; • Submission of the completed research report to the Chief Fire Officer, the Director: Policy & Strategy, and the Manager: Research Branch – Policy & Strategy, within 3 months of completion of the report and research.
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v.c. w-jhu 28/8/19

Approved <input checked="" type="checkbox"/> Comment: _____ Not Approved <input type="checkbox"/> Comment: _____ Hugh Cole: Director: Policy & Strategy: _____ Date: <u>28/8/2019</u>		Delegated authority: _____ Acceptance by Applicant: I, <u>JARON RAS</u> confirm that I agree to abide by the conditions as stipulated above. Applicant: _____ Date: <u>29/08/2019</u>
CCT departments: No interviews or data to be provided without proof of acceptance of the conditions under which the research permission is granted.		Kindly return signed copy to jameyah.amin@capetown.gov.za



UNIVERSITY of the
WESTERN CAPE



APPENDIX E: ETHICS CLEARANCE LETTER

23 June 2020

Mr J Ras
SRES
Faculty of Community and Health Sciences

Ethics Reference Number: BM19/4/3

Project Title: Prevalence of Coronary Artery Disease risk factors in firefighters in the City of Cape Town and Rescue Services.

Approval Period: 29 November 2019 – 29 November 2020

I hereby certify that the Biomedical Science Research Ethics Committee of the University of the Western Cape approved the scientific methodology and ethics of the above mentioned research project.

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

Please remember to submit a progress report in good time for annual renewal.

Permission to conduct the study must be submitted to BMREC for record-keeping.

The Committee must be informed of any serious adverse event and/or termination of the study.

*Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape*

**Director: Research Development
University of the Western Cape
Private Bag X 17
Bellville 7535
Republic of South Africa
Tel: +27 21 959 4111
Email: research-ethics@uwc.ac.za**

APPENDIX F: TURN-IT-IN REPORT

Jaron Ras Masters Thesis

ORIGINALITY REPORT

21%	12%	12%	17%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to University of the Western Cape Student Paper	3%
2	hdl.handle.net Internet Source	2%
3	PanVascular Medicine, 2015. Publication	1%
4	Elke A Westerkamp, Siobhan C Strike, Michael Patterson. "Dietary intakes and prevalence of overweight/obesity in male non-dysvascular lower limb amputees", Prosthetics and Orthotics International, 2019 Publication	1%
5	m.scirp.org Internet Source	<1%
6	Submitted to London Metropolitan University Student Paper	<1%
7	Submitted to University of Stellenbosch, South Africa Student Paper	<1%