RESEARCH 4 YOU (R4U)

The University of Nottingham
Centre of Metabolism, Ageing & Physiology (COMAP)
Research Community

Research Bulletin
Edition 1
August 2023

Foreword

Welcome to the Research Community for the Centre of Metabolism, Ageing and Physiology (COMAP).

COMAP is a University of Nottingham research group based at the Royal Derby Hospital, with a volunteer research community known as R4U (Research For You).

As the name suggests, COMAP is interested in better understanding what happens to the human body with ageing and age-associated disease, and how some of these changes may be delayed or modified with interventions.

If you are reading this newsletter you have signed up to join R4U. R4U is crucial to the work that COMAP do, and as an R4U member we will keep you updated on that work that we are doing and ask for help with research design and promotion – this is known as Patient and Public Involvement, or PPI for short.

We will also use this newsletter to let you know of any opportunities to take part in research as a volunteer, and of any public events we are aware of that we think you might be interested in.

As this is our first newsletter, please let us know if you have any comments or suggestions on how this could be improved.

Finally, if you no longer wish be part of this group, Please send an email entitled 'unsubscribe me' to MS-COMAP-Research@exmail.nottingham.ac.uk

Meet the Team

COMAP is comprised of 8 permanent academics- 5 scientists and 3 doctors, plus a number of post-PhD research fellows, technicians and PhD students.

In each edition of this newsletter, we will introduce you to two or three of the team.

Prof Beth Phillips - Beth is one of the permanent academics in COMAP and has been with the research group for almost 20 years. Beth's first degree was in Sport & Exercise Sciences at Loughborough University, after which she completed a PhD looking at the health benefits of resistance exercise training for older adults. Beth's research primarily focusses on exercise and nutritional interventions to improve the health of older adults, with and without disease. Beth is Deputy Chair of the Universities Research Ethics Committee.

Ms Hatice Ekici - Hatice is a physiotherapist and PhD student from Turkey. Supervised by Prof Beth Phillips, and academics from the Centre for Rehabilitation, Ageing & Wellbeing, Hatice's PhD will investigate the effect of motor control training on brain function in older adults. After conducting a study in older volunteers, Hatice will run a clinical trial in older patients having hip or knee surgery to see if motor control training with the arms before surgery can improve brain function in the postoperative period.

Spotlight on Findings

Having been in Derby for a little over 20 years, COMAP has published a lot of exciting research.

Recognising that scientific manuscripts aren't always the easiest to digest, each edition of this newsletter will provide a non-specialist overview of work from COMAP (old and new), including a take-home message.

Abstract 1

Publication Journal: American Journal of Clinical Nutrition
Year: 2010 **COMAP author(s):** Prof Phil Atherton

Muscle bulk is maintained via fluctuations in muscle protein synthesis (building) and muscle protein breakdown, which balance each other out. Protein nutrition and contraction of skeletal muscles (e.g., exercise or physical activity), especially in the form of resistance exercise (e.g., weight) training (RET) are widely accepted as the most common drivers of muscle building. However, before this work was conducted it was not known how long protein nutrition alone could switch on muscle building processes for. Using muscle samples from research volunteers and state-of-the art laboratory methods, this study showed that even when the availability of amino acids (the building blocks of protein) remained high after protein feeding, muscle building processes switched off after approximately 90-minutes, suggesting that repeated small doses of protein may be a preferable strategy to increase muscle mass.

Take-home message: **Regular protein consumption is important for muscle mass maintenance.**

Spotlight on Findings

Abstract 2

Published Journal: Journal of Clinical Investigation Insight

Date: 2017

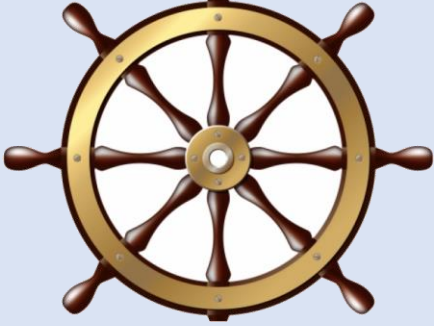
COMAP authors: Prof Beth Phillips, Dr John Williams, Prof Kenny Smith, Prof Phil Atherton

Resistance exercise training ((RET) e.g., weight training) is the most effective way to improve both muscle mass and function, each of which are important for health and quality of life, especially in older adults. However, when looking at gains in muscle mass in young compared to older individuals, it is suggested that older adults struggle to make the same gains with RET. Based on a study of young, middle-aged and older research volunteers who completed 20-weeks fully–supervised RET, this study showed that although muscle mass gains were less in middle-aged and older adults, gains in muscle strength which are key to maintenance of independence and the ability to perform activities of daily living, were identical across all age groups.

Take-home message:

It's never too late to start resistance exercise training to Improve muscle function.

New Endeavors…



On the 21st March this year we hosted our first public meeting since the the break that was enforced due to the Covid-19 pandemic.

We were delighted to welcome approximately 75 individuals from the University of the 3rd Age to the University of Nottingham Medical School at Derby- the home of COMAP.

Attendees enjoyed talks about ageing physiology from Professors Beth Phillips and Adam Gordon, and two COMAP PhD students, Harry Keevil and Isabel Ely.

Attendees also had chance to chat with the speakers and other COMAP members over tea, coffee and cake, and whilst trying out a few of our physical function tests.

Picture Description: COMAP welcomed ~75 members from the University of the 3rd Age to (Derby and surrounding areas)

We hope to hold another similar event before Xmas and all R4U members will be invited.

Call for Help

All research relies on a public voice to make sure our research is relevant to the needs of the people we are hoping to help, that the information we provide Is understandable for a non-specialist audience, and that we are spreading the message of our people to the right people in the right way.

In each edition of this newsletter, we will let you know what activities we need help with, including any studies that are looking for research volunteers.

Volunteer research participants needed for a study looking to explore the true amount of protein intake that older adults can use each day.

Call for Help

Can we improve your heart health at home?

Can a home-based intervention using a blood pressure cuff improve the health of your heart & blood vessels?

Researchers at from the **University of Nottingham** at the **Royal Derby Hospital** are looking for volunteers aged 65-85 years

Exploring a novel, time-efficient intervention to improve blood pressure in just 6 weeks

For more information please contact Dr Harry Keevil:
Email - harry.keevil@nhs.net
Telephone - 01332 724687, or
Text - 'RIPC' to 07515 412197

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Finally, if you know of anyone else who might like to join R4U, please direct them to https://www.nottingham.ac.uk/r4u/r4unad.aspx where they can sign up.

Centre Of Metabolism, Ageing & Physiology