

Ageing and Aged Care publication list May 2020

(MACH Care of the Ageing Subcommittee members' **bolded**)

1. Baseline White Matter Is Associated With Physical Fitness Change in Preclinical Alzheimer's Disease

Venkatraman V.K., Steward C.E., Cox K.L., Ellis K.A., Phal P.M., Sharman M.J., Villemagne V.L., Lai M.M.Y., Cyarto E.V., Ames D., Szoeki C., Rowe C.C., Masters C.L., **Lautenschlager N.T.**, Desmond P.M. *Frontiers in Aging Neuroscience, Volume 12, 29 April 2020, Article number 115*

About the Research: White matter (WM) microstructure is a sensitive marker to distinguish individuals at risk of Alzheimer's disease. The association of objective physical fitness (PF) measures and WM microstructure has not been explored and mixed results reported with physical activity (PA). Longitudinal studies of WM with PA and PF measures have had limited investigation. This study explored the relationship between objective PF measures over 24-months with "normal-appearing" WM microstructure.

[Link to publication](#)

2. Physical activity for older Australians with mild cognitive impairment or subjective cognitive decline – A narrative review to support guideline development

Chong T.W.H., Curran E., Ellis K.A., Southam J., You E., Cox K.L., Hill K.D., Pond D., Dow B., Anstey K.J., Hosking D., Cyarto E., **Lautenschlager N.T.** *Journal of Science and Medicine in Sport, 2020. Published online May 2020*

About the Research: This review informed development of the first national Physical Activity (PA) Guidelines for Older Australians with Mild Cognitive Impairment (MCI) or Subjective Cognitive Decline (SCD) (http://www.dementiaresearch.org.au/images/dcrc/output-files/1567-pa_guidelines_for_mci_or_scd_full_report_final.pdf). These guidelines are directed at healthcare professionals and aim to encourage older adults with SCD/MCI to engage in PA to enhance cognitive, mental and physical health.

[Link to publication](#)

3. Non-Binary and Binary Gender Identity in Australian Trans and Gender Diverse Individuals

Cheung, A.S., Leemaqz, S.Y., Wong, J.W.P., Chew, D., Ooi, O., Cundill, P., Silberstein, N., Locke, P., Zwickl, S., Grayson, R., **Zajac, J.D.**, Pang, K.C. *Archives of Sexual Behavior*, 2020, Published online May 2020.

About the research: Many trans and gender diverse (TGD) people have gender identities that are not exclusively male or female but instead fall in-between or outside of the gender binary (non-binary). It remains unclear if and how those with non-binary gender identity differ from TGD individuals with binary identities. We aimed to understand the sociodemographic and mental health characteristics of people with non-binary identities compared with binary TGD identities.

[Link to publication](#)

4. Ocular biomarkers for cognitive impairment in nonagenarians; A prospective cross-sectional study(Article)(Open Access)

Van De Kreeke J.A., Legdeur N., Badissi M., Nguyen H.T., Konijnenberg E., Tomassen J., Ten Kate M., Den Braber A., **Maier A.B.**, Tan H.S., Verbraak F.D., Visser P.J. *BMC GeriatricsOpen Access*, Volume 20, Issue 1, 28 April 2020, Article number 155.

About the research: Ocular imaging receives much attention as a source of potential biomarkers for dementia. In the present study, we analyze these ocular biomarkers in cognitively impaired and healthy participants in a population aged over 90 years (= nonagenarian), and elucidate the effects of age on these biomarkers.

[Link to publication](#)

5. Nutritional Complications and the Management of Patients with Gastroenteropancreatic Neuroendocrine Tumors.

Laing E., Kiss N., Michael M., **Krishnasamy M.** *Neuroendocrinology*, Volume 110, Issue 5, 1 April 2020, Pages 430-441.

About the research: Neuroendocrine tumors (NETs) have increased in incidence and prevalence over the past 2 decades and affect approximately 170,000 people in the United States alone. Gastroenteropancreatic (GEP) NETs (GEP NET) are a heterogeneous group of rare tumors that have distinct effects on the body due to their tumor location and potential to secrete hormones and peptides. Clinical practice guidelines and consensus guidelines for GEP NETs with regard to best practice for diagnosis, treatment, and medical management are available, but the supportive care needs and optimal nutritional management of patients affected by these unique tumors remain under-researched: evidence to guide clinical practice is lacking.

[Link to publication](#)

6. Pervasive White Matter Fiber Degeneration in Ischemic Stroke.

Egorova N., Dhollander T., Khlif M.S., Khan W., Werden E., **Brodtmann A.** *Stroke*, 2020, Pages 1507-1513. Published online May 2020.

About the research: We examined if ischemic stroke is associated with white matter degeneration predominantly confined to the ipsi-lesional tracts or with widespread bilateral axonal loss independent of lesion laterality.

[Link to publication](#)

7. The Apolipoprotein Allele and Sensorineural Hearing Loss in Older Community-Dwelling Adults in Australia.

Sarant J.Z., Bowe S.J., McEvoy M., Attia J. *Ear and Hearing*, 2020, Pages 622-629. Published online May 2020.

About the research: Previous research has investigated whether the apolipoprotein E (APOE) $\epsilon 4$ allele, which is associated with an increased risk of cognitive decline, is also associated with hearing loss in older people. Results of the very limited research to date are conflicting, and sample sizes for all but one study were small. The present study aimed to investigate whether there is an association between the APOE $\epsilon 4$ allele and hearing loss in a large, population-based sample of community-dwelling older adults.

[Link to publication](#)

8. Age-Related Increases in Marrow Fat Volumes have Regional Impacts on Bone Cell Numbers and Structure

Al Saedi A., Chen L., Phu S., Vogrin S., Miao D., Ferland G., Gaudreau P., **Duque G.** *Calcified Tissue International*, 2020. Published online May 2020.

About the research: The increasing levels of bone marrow fat evident in aging and osteoporosis are associated with low bone mass and attributed to reduced osteoblastogenesis. Local lipotoxicity has been proposed as the primary mechanism driving this reduction in bone formation. However, no studies have examined the correlation between high levels of marrow fat volumes and changes in local cellularity. In this study, we hypothesize that areas of bone marrow with high fat volumes are associated with significant changes in cell number within a similar region of interest (ROI).

[Link to publication](#)

9. Walking Speed and Muscle Mass Estimated by the D3-Creatine Dilution Method Are Important Components of Sarcopenia Associated With Incident Mobility Disability in Older Men: A Classification and Regression Tree Analysis

Zanker J., Patel S., Blackwell T., Duchowny K., Brennan-Olsen S., Cummings S.R., Evans W.J., Orwoll E.S., Scott D., Vogrin S., Cauley J.A., **Duque G.**, Cawthon P.M., Osteoporotic Fractures in Men (MrOS) Study Group. *Journal of the American Medical Directors Association*, 2020. Published online May 2020.

About the research: Objectives: It is unknown whether muscle mass measured by the D3-creatine dilution method is a superior predictor of incident mobility disability than traditional components of sarcopenia definitions (including grip strength, walking speed, appendicular lean mass). The objective of this study was to determine the relative importance of strength; physical performance; and lean, fat, and muscle mass in predicting incident mobility disability in older men.

[Link to publication](#)

10. Trajectories of Mini-Mental State Examination Scores over the Lifespan in General Populations: A Systematic Review and Meta-Regression Analysis

Nagaratnam J.M., Sharmin S., Diker A., Lim W.K., Maier A.B. *Clinical Gerontologist*, 2020. Published online May 2020.

About the research: Objectives: Over the lifespan cumulative changes to the brain lead to cognitive decline and eventually to dementia in 20–25% of adults 85 years and older. A commonly used screening tool for cognitive function is the Standard 30 point Mini-Mental State Examination (MMSE). Though the MMSE is used to screen for dementia, little is known about the changes in scores over the lifespan in general populations.

[Link to publication](#)

11. Frailty, Sarcopenia, and Malnutrition Frequently (Co-)occur in Hospitalized Older Adults: A Systematic Review and Meta-analysis

Ligthart-Melis, G.C., Luiking, Y.C., Kakourou, A., Cederholm, T., Maier, A.B., de van der Schueren, M.A.E. *Journal of the American Medical Directors Association*, 2020. Published online May 2020.

About the research: The purpose of this systematic review and meta-analysis was to summarize the prevalence of, and association between, physical frailty or sarcopenia and malnutrition in older hospitalized adults.

[Link to publication](#)



12. Frailty in the Face of COVID-19

Hubbard R.E., **Maier A.B.**, Hilmer S.N., Naganathan V., Etherton-Beer C., Rockwood K. *Age and ageing*, 6 May 2020

About the Research:

- The Clinical Frailty Scale is a quick and reliable screening tool for frailty.
- While the CFS has value in allocation of scarce health resources, it also has limitations.
- Frailty is a continuum rather than a dichotomous variable.
- The type and severity of the presenting illness are important variables independently associated with the clinical outcome.
- A person-centred approach should consider the severity of illness and likelihood of success as well as the degree of frailty.

[Link to publication](#)

13. Androgens stimulate erythropoiesis through the DNA-binding activity of the androgen receptor in non-hematopoietic cells

McManus J.F., Nguyen N.-Y.N., Davey R.A., MacLean H.E., Pomilio G., McCormack M.P., Chiu W.S., Wei A.H., **Zajac J.D.**, Curtis D.J. *European Journal of Haematology*, 2020. Published online May 2020.

About the Research: Background: Androgens function through DNA and non-DNA binding-dependent signalling of the androgen receptor (AR). How androgens promote erythropoiesis is not fully understood.

[Link to publication](#)

14. The ubiquitin proteasome system and schizophrenia.

Luza S., Opazo C.M., Bousman C.A., Pantelis C., **Bush A.I.**, Everall I.P. *The Lancet Psychiatry, Volume 7, Issue 6, June 2020, Pages 528-537. Published online May 2020.*

About the research: The ubiquitin-proteasome system is a master regulator of neural development and the maintenance of brain structure and function. It influences neurogenesis, synaptogenesis, and neurotransmission by determining the localisation, interaction, and turnover of scaffolding, presynaptic, and postsynaptic proteins. Moreover, ubiquitin-proteasome system signalling transduces epigenetic changes in neurons independently of protein degradation and, as such, dysfunction of components and substrates of this system has been linked to a broad range of brain conditions. Although links between ubiquitin-proteasome system dysfunction and neurodegenerative disorders have been known for some time, only recently have similar links emerged for neurodevelopmental disorders, such as schizophrenia. Here, we review the components of the ubiquitin-proteasome system that are reported to be dysregulated in schizophrenia, and discuss specific molecular changes to these components that might, in part, explain the complex causes of this mental disorder. © 2020 Elsevier Ltd

[Link to publication](#)

15. The effect of self-treatment of wounds on quality of life: a qualitative study

Kapp, S., Santamaria, N. *Journal of wound care, Volume 29, Issue 5, 2 May 2020, Pages 260-268*

About the research: Skin wounds, such as leg ulcers and pressure ulcers (PUs), can have a negative effect on quality of life (QoL). This effect has been confirmed among self-treaters of wounds, specifically. The aim of the study was to investigate the effect of self-treatment of wounds on the physical, emotional, lifestyle and financial domains of QoL. The findings of the study may be used to optimise the wellbeing of people who have wounds.

[Link to publication](#)