the world. These policies have been launched as universal one size fits all solutions to the challenges that population aging entail. At the core of these policies are, however, values that are often associated with highly industrialized societies which attribute great importance to independence, activity, future-orientation and the mastering of illness/ diseases in old age. This raises the question of these policies' appropriateness for populations that do not share these values and/ or whose life-course is not characterized by the continuity that the successful aging paradigm presupposes. This presentation will use research on older migrant populations across Europe to argue that the social position of privilege that these policies take for granted is exclusionary.

SESSION 5105 (SYMPOSIUM)

BLUE VERSUS GRAY: POTENTIAL HEALTH BENEFITS OF BLUEBERRIES FOR SUCCESSFUL AGING

Chair: D.K. Ingram, *Louisiana State University, Baton Rouge, Louisiana*

B. Shukitt-Hale, *USDA-HNRCA at Tufts University, Boston, Massachusetts*

Emerging evidence from both preclinical and clinical studies have generated evidence of the potential health benefits of consuming blueberries (BBs). This fruit contains among the highest levels of polyphenols identified that provide highly effective antioxidant protection in addition to activating a wide range of other stress signaling pathways directly impacting health. The challenge now is to identify mechanisms through which BBs mediate their health benefits. Based on a wide range of preclinical and clinical studies, D Ingram (LSU, USA) will chair this symposium to review progress in assessing the health effects of BBs to promote successful aging. A Rodriguez-Mateos (U. Duesseldorf, GERMANY) will review studies examining the cardiovascular effects of BBs. CM Williams (U Reading, UK) will examine the cognitive effects of BB consumption in children and adults. B Shukitt-Hale (USDA/Tufts U, USA) will present data examining the effects of BB on motor and cognitive performance and brain inflammation in older adults. Y Desjardins (Laval U, CANADA) will present findings highlighting effects of BB consumption on the microbiome and its impact upon various health parameters. D Ingram will conclude with a talk focused on the concept of "hormesis." Specifically, he will present data showing that berry fruits provide long-term protection against oxidative stress because they initially generate an essential mild oxidative stress.

EFFECTS OF BLUEBERRIES ON CARDIOVASCULAR FUNCTION

A. Rodriguez-Mateos, *King's College London, London, United Kingdom*

Recent epidemiological and human intervention studies suggest that berry consumption may have cardiovascular health benefits. Blueberries are rich sources of potential bioactive compounds such as polyphenols, fiber, minerals and vitamins. To date, few clinical trials have been conducted investigating the effect of blueberry consumption on clinically relevant biomarkers of cardiovascular disease (CVD) risk, showing that blueberry supplementation can decrease

blood pressure, improve endothelial function and decrease arterial stiffness in people at risk of CVD, such as pre-hypertensive, overweight, obese or people with metabolic syndrome. However, in the context of dietary recommendations and primary prevention of CVD it is also important to investigate the effects of polyphenol-rich foods on healthy people. We have conducted several clinical studies showing that blueberry consumption can improve endothelial function in healthy individuals and that these effects correlate with plasma blueberry polyphenol metabolites. The evidence available on the effects of blueberries on cardiovascular function and the role of polyphenols as mediators of those effects will be discussed.

EFFECTS OF ANTHOCYANIN-RICH BLUEBERRIES ON COGNITIVE FUNCTION IN HEALTHY YOUNGER AND OLDER ADULTS

C. Williams, G. Dodd, D. Lamport, J. Spencer, L. Butler, *School of Psychology & Clinical Language Sciences, University of Reading, Reading, United Kingdom*

Evidence from human studies demonstrates that consumption of various flavonoid subclasses are associated with cognitive benefits. We investigated the effects of an anthocyanin-rich blueberry beverage (BB), or matched placebo, on vascular and cognitive function in healthy younger and older adults. Stiffness index (SI), blood pressure (BP) and levels of brain-derived neurotrophic factor (BDNF) were recorded at baseline and one hour, whilst cognitive function was measured at baseline, 2 and 5 hours post-treatment. An MRI study was included to determine changes in cerebral blood flow (CBF). BB treatment produced better cognitive performance and higher circulating levels of BDNF. Correspondingly, increased CBF was observed in the precentral and middle frontal gyrus, as well as the angular gyrus, following BB. This suggests that acute BB treatment results in cognitive benefits mediated by an action on BDNF signalling pathways, in addition to vasodilatory properties and subsequent CBF increases.

EFFECTS OF BLUEBERRIES ON INFLAMMATION, MOTOR PERFORMANCE, AND COGNITIVE FUNCTION

B. Shukitt-Hale, M. Miller, N. Thangthaeng, D. Fisher, D. Bielinski, M. Kelly, T. Scott, *USDA-HNRCA at Tufts University, Boston, Massachusetts*

Motor and cognitive function decrease with age, to include deficits in balance, coordination, gait, processing speed, executive function, memory, and spatial learning. These functional declines may be caused by long term increases in and susceptibility to oxidative stress and inflammation. Research conducted in our laboratory, initially with aged animals but more recently with humans, has shown that consumption of blueberries, which are high in polyphenolics and have antioxidant and anti-inflammatory properties, can prevent and even reverse age-related neuronal deficits. Participants, aged 60–75 years, in a randomized, double-blind, placebo-controlled trial, consumed freeze-dried blueberry (24g/d, equivalent to 1cup blueberries) or placebo, and completed a battery of motor and cognitive tests at baseline, and following 45 and 90 days of intervention. Blueberry