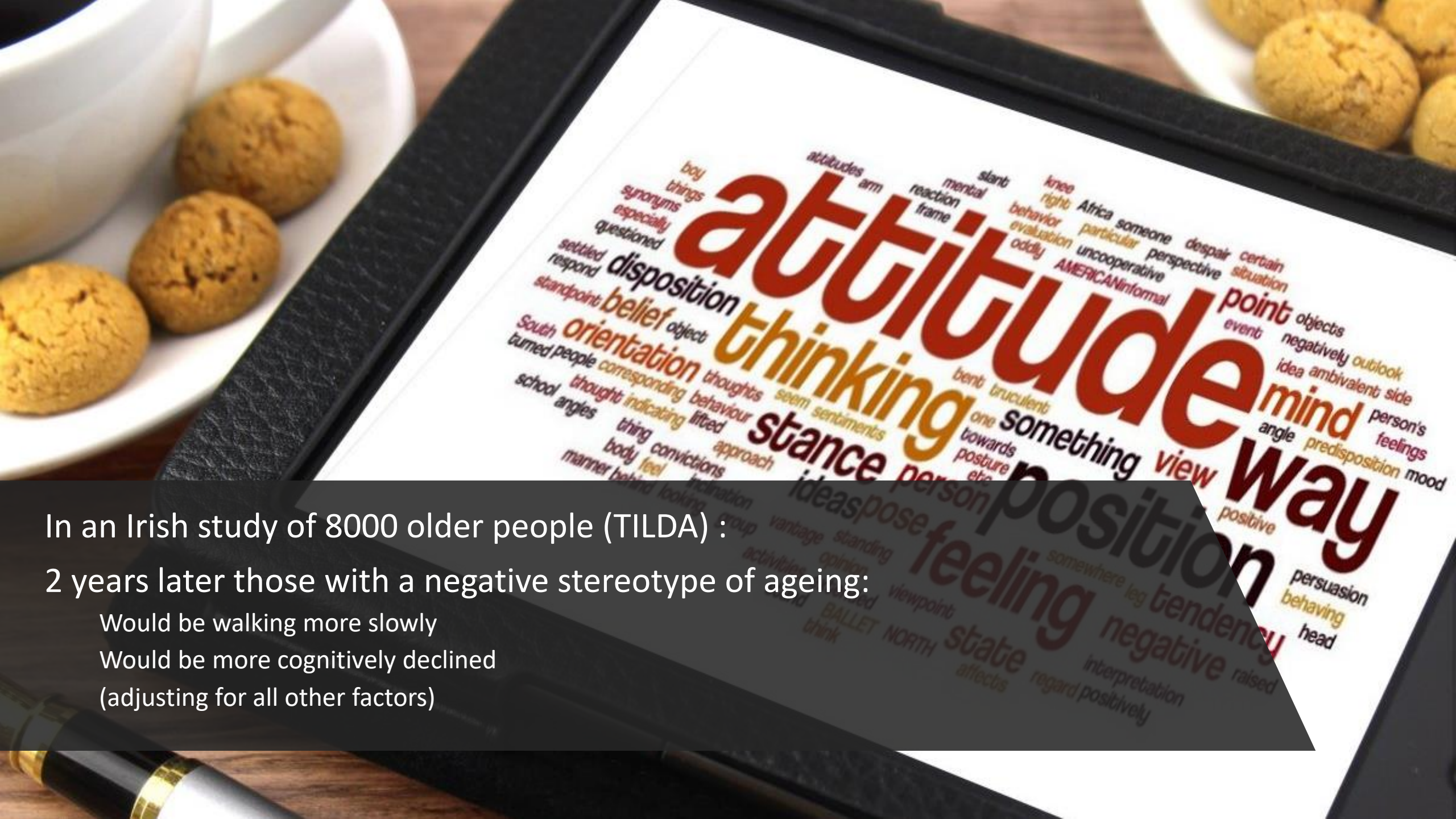
What do you expect at your age?

Prof Peter Gore CEng FIMechE FRSA
Professor of Practice in Healthy Ageing at Newcastle University
CEO & co-founder ADL Smartcare Limited, Sheffield UK

Taking up marathon running at 89?

Fauja Singh – marathon runner (by accident)
aged 89 – 104
(still running at 109)



In an Irish study of 8000 older people (TILDA) :

2 years later those with a negative stereotype of ageing:

- Would be walking more slowly
- Would be more cognitively declined
- (adjusting for all other factors)

What is the LifeCurve™?

“Healthy ageing should be considered from the perspective of the functional ability that enables older persons to be, and do, what they have reason to value.

- World Health Organisation

Hiking
Brisk walking
Get up from the floor
Walk one mile

Cutting toenails
Shopping
Using steps
Walk 400 yards
Heavy housework
Full wash
Cook a hot meal
Moving around
Transfer from a chair
Light housework
Transfer from toilet
Get dressed
Transfer from bed
Wash face and hands
Eat independently

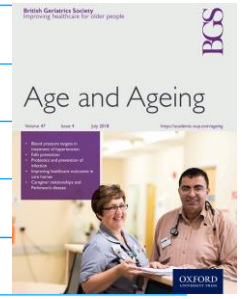
Based on continuing research at Newcastle University, UK

What do you expect at your age?

Earliest 42 **Median 79** **Latest 100**

ADL RESEARCH

"New horizons in the compression of functional decline" in Age and Ageing 2018



delaying decline gives
more *better* years
(*not more* years)

LE

CFD* Research

Elapsed time on the LifeCurve™

* COMPRESSION OF FUNCTIONAL DECLINE

LIFECURVE™ Version 2.4.1

Healthy ageing with LifeCurve™
(compression-ordered interventions)

Build reserve

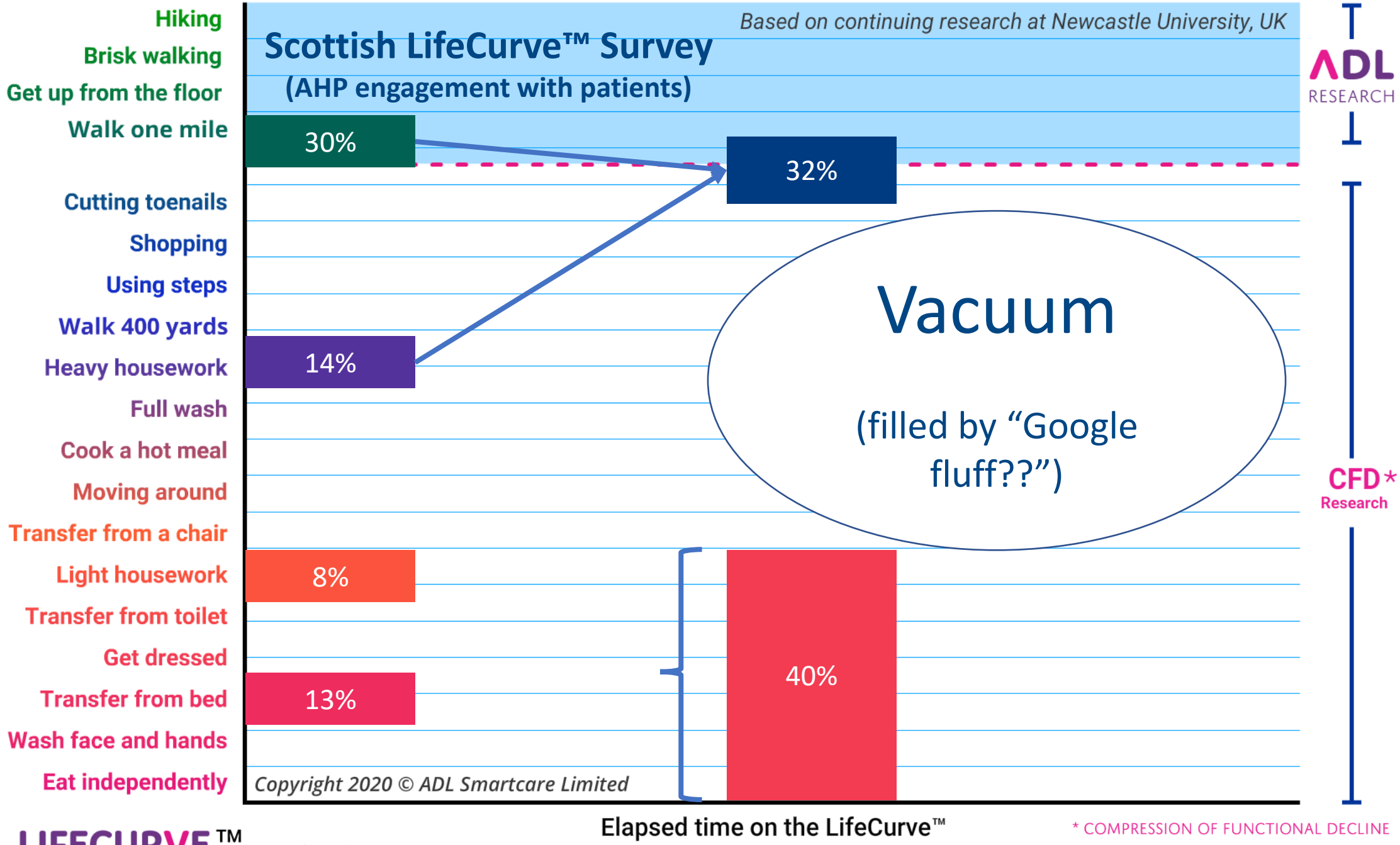
Get it back

Equipment

Care

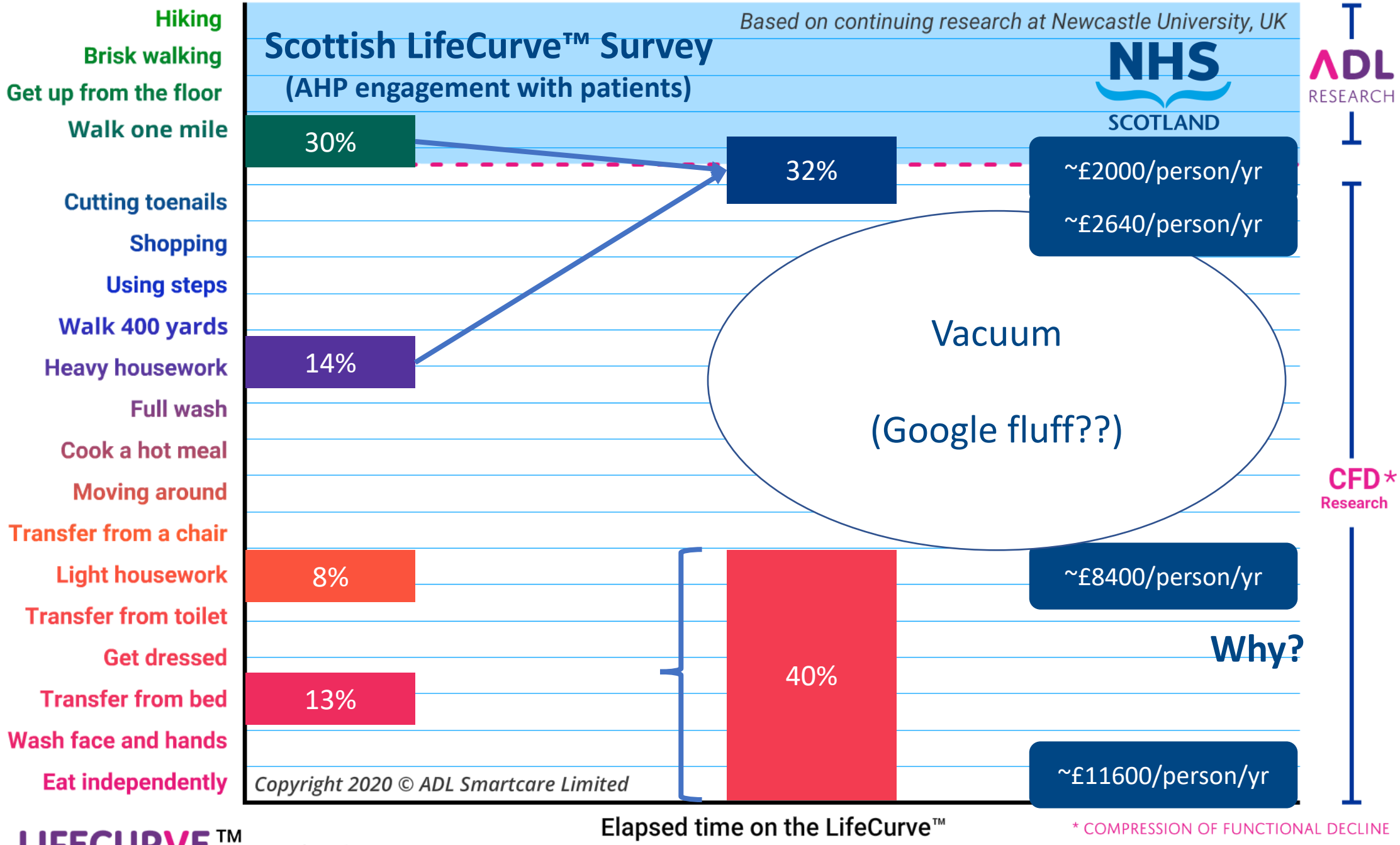
- - - - - - - an opportunity to make choices at every stage - - - - - - -

Who do public services reach?



LIFECURVE™ Version 2.4.1

Where & what do we spend now?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Wash face and hands
Eat independently
Scottish LifeCurve™ Survey
(AHP engagement with patients)
Based on continuing research at Newcastle University, UK
NHS SCOTLAND
ADL RESEARCH
30%
32%
~£2000/person/yr
~£2640/person/yr
Vacuum
(Google fluff??)
14%
8%
40%
13%
~£8400/person/yr
Why?
~£11600/person/yr
CFD* Research
Copyright 2020 © ADL Smartcare Limited
Elapsed time on the LifeCurve™
* COMPRESSION OF FUNCTIONAL DECLINE
LIFECURVE™ Version 2.4.1

Why do *medical* costs increase?

Hippocampal plasticity underpins long-term cognitive gains from resistance exercise in MCI

Kathryn M. Broadhousea,b,∗, Maria Fiatarone Singhc,d, Chao Suob,e, Nicola Gatesb,f,g, Wei Wenf,h, Henry Brodatyg,i, Nidhi Jainj, Guy C. Wilsonj, Jacinda Meiklejohnj, Nalin Singhj, Bernhard T. Baunek, Michael Bakerc,l, Nasim Foroughim, Yi Wangm,n, Nicole Kochang, Kevin Ashtono, Matt Brownp,r, Zhixiu Lip, Yorgi Mavrosc, Perminder S. Sachdevg, Michael J. Valenzuelab,q,∗∗

Given the great challenge of dementia to modern society it is promising to show for the first time that 6 months of high intensity resistance exercise is capable of not only promoting cognition in those with MCI, but also protecting AD-vulnerable hippocampal subfields from degeneration for at least 12 months post-intervention. Future work will need to establish just how long-lived these outcomes are and whether they are sufficient enough to delay cognitive decline. Despite this, given the strength of our findings we recommend that resistance exercise be considered an integral part of lifestyle-based prevention programs in older persons.

doi:10.1016/j.nicl.2020.102182.

Functional ageing: Education and climbing stairs

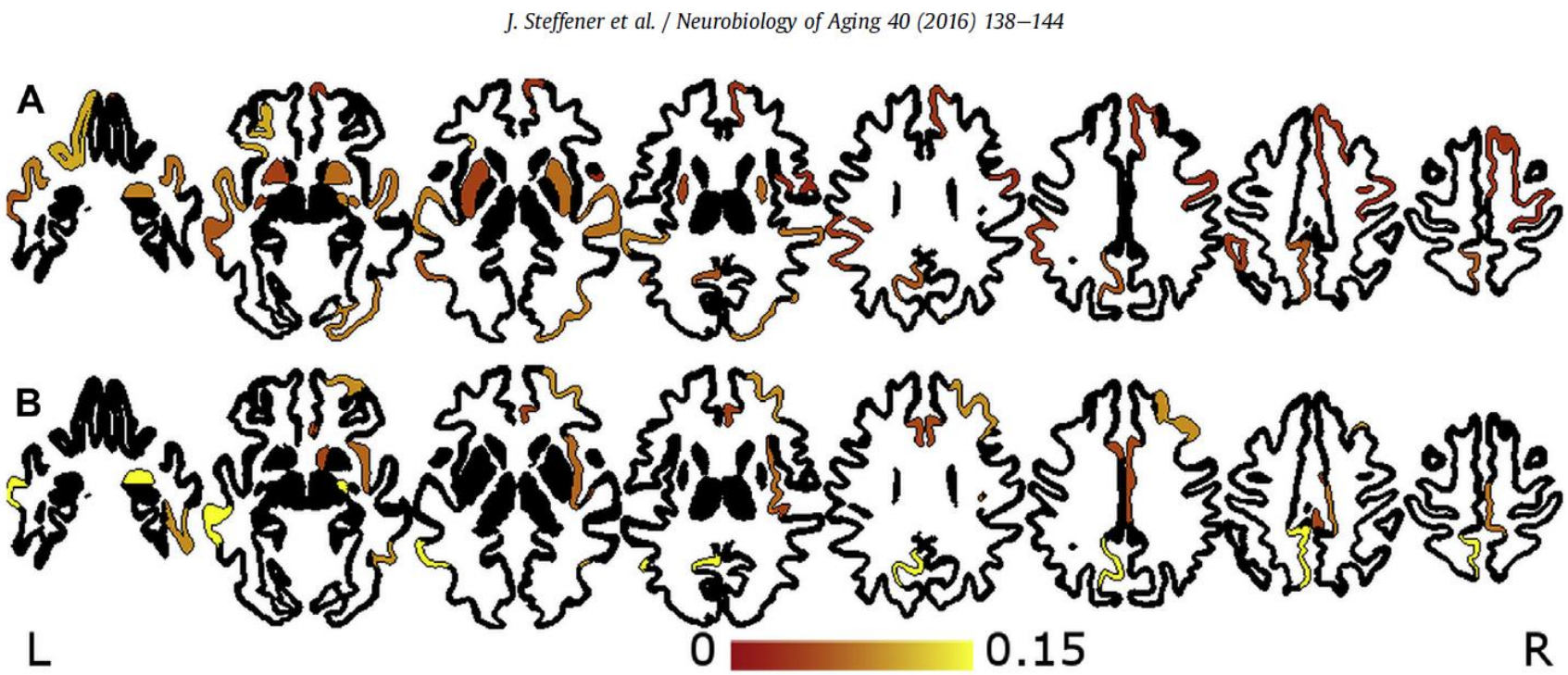


Fig. 2. Overlay of effect sizes for significant regions for education (A) and flights of stairs climbed (B).

For every:

Year in education
your brain is **0.95** yrs physiologically younger

Extra FOSCD
Your brain is **0.58** yrs physiologically younger

DISABILITY AND REHABILITATION, 2018
VOL. 40, NO. 11, 1259–1265
http://dx.doi.org/10.1080/09638288.2017.1294207

Taylor & Francis
Taylor & Francis Group

RESEARCH PAPER

Effects of line dancing on physical function and perceived limitation in older adults with self-reported mobility limitations

Crystal G. Bennett[a] and Madeleine E. Hackney[b,c]

[a]School of Nursing, University of West Florida, Pensacola, USA; [b]Atlanta VA Medical Center, Center for Visual & Neurocognitive Rehabilitation, Atlanta, USA; [c]Department of Medicine, Division of General Medicine and Geriatrics, Emory University School of Medicine, Atlanta, USA

Conclusions: Eight weeks of line dancing significantly improved physical function and reduced self-reported mobility limitations in these individuals. Line dancing could be recommended by clinicians as a potential adjunct therapy that addresses mobility limitations.

Van Abbema *et al. BMC Geriatrics* (2015) 15:72
DOI 10.1186/s12877-015-0061-9

BMC Geriatrics

RESEARCH ARTICLE Open Access

What type, or combination of exercise can improve preferred gait speed in older adults? A meta-analysis

Renske Van Abbema[1*], Mathieu De Greef[1,2], Celine Crajé[1], Wim Krijnen[1], Hans Hobbelen[1] and Cees Van Der Schans[1,3]

Improving gait speed is important – but just two activities were found to be significant in a meta-study:

- progressive resistance training (70-80% of 1 RM)
- exercise with a rhythmic component
- (balance training may have been insufficiently task-orientated to show an effect)
- (the jury is out on endurance training)

Activity mitigates sitting if sufficient

Our findings indicate that sedentary time is a potent risk factor for mobility loss in older age that is independent of light-intensity and moderate-to-vigorous–intensity physical activity, as well as sex, educational attainment, smoking, and prevailing health status. Among those people reporting ≥7 h/wk of physical activity, there was no significant association between sitting up to 6 h/d and mobility disability, suggesting that higher levels of physical activity can mitigate some of the deleterious effects of prolonged sitting in older age. In contrast, increased TV time was significantly associated with increased mobility disability at follow-up within all levels of reported physical activity—and this was especially so in the least active participants.

The Journals of Gerontology: Series A, Volume 73, Issue 4, April 2018, Pages 532–538, https://doi.org/10.1093/gerona/glx122

LIFECURVE™

BAY OF PLENTY
DISTRICT HEALTH BOARD
HAUORA A TOI

Building an academic LifeCurve research collaboration
between Newcastle University, BOPDHB & Auckland University et al

So what could you do?

What could a ‘LifeCurve™’ Support Community achieve?

Build reserve

Get it back

Equipment

Care

…with links to mainstream services informed by an underlying impairment model

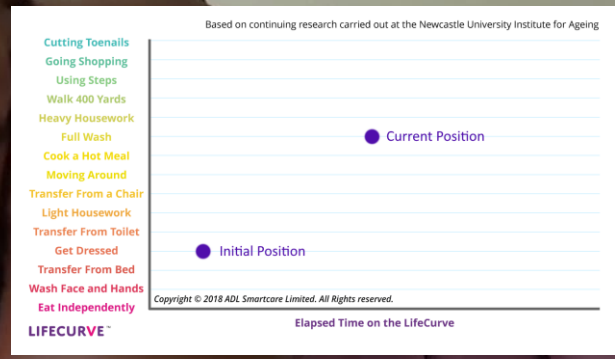
Mass re-ablement

(it takes all sorts)

Fill the gap

…with curated evidence-based interventions

Model rated by CQC as “Outstanding” and supported by RCN



60% of people receiving Dom Care agree to exercises (saving up to 15% of care in 6 weeks)

The Scottish LifeCurve™ Survey (on paper!)…

ORCHA

Safe, stage specific exercises included

Free app

Secure Staff Access website

Digital operational tools now available from ADL Smartcare


Questions
later?