## Chronic Outcomes

(CVD, diabetes, cancer, mortality, aging, longevity)


## Dietary Patterns

(Mediterranean diet, vegetarianism, DASH, etc.)

Micronutrients
(dietary supplements, multivitamins, multiminerals)

## Role of Dietary Patterns

## Seven Countries Study

Mediterranean Diet Pyramid


## What was the "Mediterranean Way"?

"...the ordinary food of common Southern Italians---
homemade minestrone (vegetable soup); pasta in endless variety, always freshly cooked, served with tomato sauce and a sprinkle of cheese; a hearty dish of beans and short lengths of macaroni ('pasta e fagioli'); lots of bread...never served with any kind of spread; great quantities of fresh vegetables; a modest portion of meat or fish twice a week; wine...; always fresh fruit for dessert..."

"Eat Well, Stay Well, the Mediterranean Way" Ancel Keys \& Margaret Harvey (1975)

[^0]
## The Mediterranean Diet

- Olive Oil
- Wine
- Garlic
- Fish
- Vegetables
- Legumes
- Fruit as dessert
- A philosophy of Iffe...
'Mediterranean' dietary pattern for the primary prevention of cardiovascular disease (Review)

Rees K, Hartley L, Flowers N, Clarke A, Hooper L, Thorogood M, Stranges S


> THE COCHRANE COLLABORATION ${ }^{\circledR}$


## ORIGINAL RESEARCH

## Mediterranean-Style Diet for the Primary and Secondary Prevention of Cardiovascular Disease: A Cochrane Review

Karen Rees¹, Andrea Takeda², Nicole Martin², Leila Ellis¹, Dilini Wijesekara¹, Abhinav Vepa ${ }^{1}$, Archik Das¹, Louise Hartley ${ }^{3}$ and Saverio Stranges ${ }^{4,5,6}$

## Eat well. Live well.

Eat a variety of healthy foods each day


Discover your food guide at Canada.ca/FoodGuide

[^1]Canadä

## Eat well. Live well.

Healthy eating is more than the foods you eat


Be mindful of your eating habits


Enjoy your food


Eat meals with others


Limit foods high in sodlum, sugars or saturated fat


Discower your food guide at
ח+
Canada.ca/FoodGuide
Canadả

From Dietary Patterns to Nutritional Supplements: A potential shortcut to chronic disease prevention...?


## Vitamin E Supplementation and Mortality



Miller ER et al. Ann Intern Med 2005;142:37-46

## Mortality in Randomized Trials of Antioxidant Supplements


${ }^{*} P<.05$

## Selenium Supplementation \& Chronic Disease Prevention

## Nutritional Prevention of Cancer (NPC) Trial



JAMA 1996;276:1957-63

## Selenium Supplementation and CVD NPC Trial (1983-1996)

## Participants without prevalent CVD at randomization ( $n=1,004$ ) Mean follow-up: 7.6 years

| CVD | Cases |  | Adjusted hazard ratios* |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  | Se | Placebo | HR | $95 \% \mathrm{CI}$ | $P$ |
| All CVD | 103 | 96 | 1.03 | $0.78-1.37$ | 0.81 |
| All CHD | 63 | 59 | 1.04 | $0.73-1.49$ | 0.81 |
| ALL CVA | 40 | 37 | 1.02 | $0.65-1.59$ | 0.94 |
| CVD Mortality | 40 | 31 | 1.22 | $0.76-1.95$ | 0.41 |
| All-cause Mortality | 110 | 111 | 0.95 | $0.73-1.24$ | 0.71 |

## Selenium Supplementation and Diabetes NPC Trial



# Selenium supplementation for the primary prevention of cardiovascular disease (Review) 

Rees K, Hartley L, Day C, Flowers N, Clarke A, Stranges S


## Selenium Supplementation \& CVD Prevention: Cochrane Systematic Review

## All CVD events (fatal and non-fatal)



## Type 2 Diabetes



Rees K, Stranges S. Cochrane Database Systematic Reviews 2013;1:CD009671

## Effect of Selenium Supplementation (5 years) on All-cause Mortality - DK PRECISE Trial



Rayman MP, Stranges S, et al. Free Radic Biol Med. 2018;127:46-54

Geographic variations in Selenium status might explain inconsistent results across populations (biological plausibility)


Rayman MP, Stranges S. Free Radic Biol Med. 2013;65:1557-64

Selenium and Vitamin E Cancer Prevention Trial (SELECT)

|  | Vitamin E <br> $(400 \mathrm{IU} / \mathrm{day})$ |  |  |
| :---: | :---: | :---: | :---: |
| Selenium <br> $(200 \mathrm{\mu g} / \mathrm{day})$ | + | - | T |
| + | 8,100 | 8,100 | 16,200 |
| + | 8,100 | 8,100 | 16,200 |
| T | 16,200 | 16,200 | 32,400 |

Cost: \$175,000,000 (NCI, NIH, etc.)

## SELECT: Findings...Stopped after 5.5 y $\mathrm{n}=35,533$ US male adults



JAMA. 2009; 301:39-51

## Editorial

## Annals of Internal Medicine

## Enough Is Enough: Stop Wasting Money on Vitamin and Mineral Supplements

Ann Intern Med. 2013;159:850-851.


Eliseo Guallar, MD, DrPH<br>Johns Hopkins Bloomberg School of Public Health Baltimore, Maryland

Saverio Stranges, $M D, \operatorname{PhD}$
Warwick Medical School, University of Warwick Coventry, United Kingdom

Cynthia Mulrow, MD, MSc
Annals of Internal Medicine, American College of Physicians
Philadelphia, Pennsylvania

Lawrence J. Appel, MD, MPH
Edgar R. Miller III, MD, PhD
Johns Hopkins School of Medicine
Baltimore, Maryland

Nutrition, Metabolism \& Cardiovascular Diseases

Nutrition and health: Time for a paradigm shift for climate change
Saverio Stranges ${ }^{\text {a,b,c,e,*, Isaac Luginaah }}{ }^{\text {a,b,d }}$
${ }^{a}$ Departments of Epidemiology \& Biostatistics, Family Medicine \& Medicine, Western University, London, ON, Canada
${ }^{b}$ Western Centre for Climate Change, Sustainable Livelihoods and Health, Western University, London, ON, Canada
${ }^{\text {}}$ Department of Precision Health, Luxembourg Institute of Health, Strassen, Luxembourg
${ }^{d}$ Department of Geography and Environment, Western University, London, ON, Canada
${ }^{e}$ The Africa Institute, Western University, ON, Canada




Es that impact humanity in the twenty frist certury
(4) SUSTANABEE DEVEOPPUENT GO



## Emerging Risk Factors: Sleep Health \& Chronic Disease




In whatever disease sleep is laborious, it is a deadly symptom; but if sleep does good, it is not deadly.

Hippocrates, 460-370 BC Ancient Greek physician, the "Father of Medicine"


On average, we spend a third of our lives sleeping...

Societal-Level Factors
Globalization, 24/7 Society, Geography, Public Policy, Technology and Progress, Racism and Discrimination, Economics, Natural Environment

Social-Level Factors
Home, Family, Work, School, Neighborhood, Religion, Culture, Race/Ethnicity, Socioeconomic Status, Social Networks

Individual-Level Factors
Genetics, Beliefs, Attitudes, Behaviors, Physiology,
Psychology, Health, Choices



Physical/Social Environment and Sleep Health. CHEST. 2020;157:1304-13


## Sleep Health: Can We Define It? Does It Matter?



Buysse DJ. SLEEP 2014;37:9-17


## Why sleep matters -

 the economic costs of insufficient sleepA cross-country comparative andlysis

Marco Hafner, Martin Stepanek, Jirka Taylor,
Wendy M. Troxel, Christian van Stolk

Rand Health Q. 2017; 6(4):11

Canada $\$ 21.4$ billion

### 1.35\% <br> GDP

United Kingdom $\$ 50$ billion

### 1.86\%

 GDPUnited States $\$ 411$ billion


## Sleep Problems: An Emerging Global Epidemic? Findings From the INDEPTH WHO-SAGE Study Among More Than 40,000 Older Adults From 8 Countries Across Africa and Asia

Saverio Stranges, MD, PhD'; William Tigbe, MD, PhD'; Francesc Xavier Gómez-Olivé, MD ${ }^{2,3}$; Margaret Thorogood, $\mathrm{PhD}^{12,3}$; Ngianga-Bakwin Kandala, $\mathrm{PhD}^{1}$
${ }^{2}$ Division of Health Sciences, University of Warwick Medical School, Coventry, UK; ${ }^{2}$ MRC/Wits Rural Public Health and Health Transitions Research Unit (Agincourt), School of Public Health, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa; ${ }^{3}$ INDEPTH Network, Accra, Ghana


## Sleep Problems: an Emerging Global Epidemic?



Health and Demographic Surveillance System sites

Stranges S, Kandala N-B, et al. Sleep. 2012;35:1173-1181

# Decline in Sleep Duration over time: Canadian National Population Health Survey (2002-2011), N=8,673 



## SLEEP PROBLEMS \& CHRONIC DISEASE

> Cardiometabolic Risk Factors/Disease

- Obesity/Body Fat Distribution
- Type 2 Diabetes
- Hypertension
- Cardiovascular Disease/Stroke
> Cancer
$>$ Mental Disorders
$>$ Multimorbidity
$>$ Neurodegenerative Disease/Cognitive Decline
$>$ Overall \& Cause-Specific Mortality



# Sleep problems and mortality in South Africa: Agincourt Study, Health \& Demographic Surveillance System (HDSS) 



Log rank test $P<.001$


Log rank test $P<.001$.

Stranges S, Kandala N-B, Tigbe W, et al. Sleep Medicine 2014;15:56-63

Gender-specific associations of short sleep duration with prevalent and incident hypertension: the Whitehall II Study

Francesco P Cappuccio ${ }^{*}$, Saverio Stranges*, Ngianga-Bakwin Kandala*, Michelle A Miller*, Frances M Taggart ${ }^{\star}$, Meena Kumari ${ }^{\dagger}$, Jane E Ferrie ${ }^{\dagger}$, Martin J Shipley ${ }^{\dagger}$, Eric J Brunner ${ }^{\dagger}$, and Michael G Marmot ${ }^{\dagger}$
*Clinical Sciences Research Institute, Warwick Medical School, Coventry, UK
${ }^{\dagger}$ International Centre for Health \& Society, University College London Medical School, London, UK

## A population-based study of reduced sleep duration and hypertension: the strongest association may be in premenopausal women <br> Saverio Stranges ${ }^{\mathrm{a}, \mathrm{b}}$, Joan M. Dorn ${ }^{\mathrm{b}, \mathrm{c}}$, Francesco P. Cappuccio ${ }^{\text {d }}$, Richard P. Donahue ${ }^{\text {b }}$, Lisa B. Rafalson ${ }^{\mathrm{e}}$, Kathleen M. Hovey ${ }^{\text {b }}$, Jo L. Freudenheim ${ }^{\text {b }}$, Ngianga-Bakwin Kandala ${ }^{\text {d }}$, Michelle A. Miller ${ }^{\text {d }}$ and Maurizio Trevisan ${ }^{\text {b,t }}$

Contents lists available at ScienceDirect

## Sleep Medicine

Original Article
Influence of sleep disturbances on age at onset and long-term incidence of major cardiovascular events: the MONICA-Brianza and PAMELA cohort studies

Francesco Gianfagna ${ }^{\text {a,b }}$, Giovanni Veronesi ${ }^{\text {a }}$, Lorenza Bertù ${ }^{\text {a }}$, Giancarlo Cesana ${ }^{\text {c }}$, Guido Grassi ${ }^{\text {cd, }}$, Saverio Stranges ${ }^{\text {ef }}$, Camilla Callegari ${ }^{\text {a,t }}$, Marco M. Ferrario ${ }^{\text {a,* }}$

A short questionnaire discriminating different levels of sleep disturbances should be routinely adopted in CVD prevention programs to identify individuals at increased risk for early-onset

## Sleep Deprivation \& Diabetes

## Short Sleep Duration is Associated with the Development of Impaired Fasting Glucose: The Western New York Health Study

LISA RAFALSON, PhD, RICHARD P. DONAHUE, PHD, MPH, SAVERIO STRANGES, MD, PHD, MICHAEL J. LAMONTE, PhD, MPH, JACEK DMOCHOWSKI, PhD, JOAN DORN, PhD, AND MAURIZIO TREVISAN, MD, MS

Diabetes \& Metabolism 48 (2022) 101263

|  | Available online at ScienceDirect <br> www.sciencedirect.com | Elsevier Masson France EM\|consulte www.em-consulte.com |  |
| :---: | :---: | :---: | :---: |

Original article
Objective and subjective sleep measures are associated with HbA1c and insulin sensitivity in the general population: Findings from the ORISCAV-LUX-2 study
G.A. Aguayo ${ }^{\text {a., }}$, J. Pastore ${ }^{\text {a }}$, A. Backes ${ }^{\text {a }}$, S. Stranges ${ }^{\text {a.b }}$, D.R. Witte ${ }^{\text {c.d }}$, N.J. Diederich ${ }^{\text {e }}$
A. Alkerwi ${ }^{\text {f }}$, L. Huiart ${ }^{\text {a }}$, M. Ruiz-Castell ${ }^{\text {a }}$, L. Malisoux ${ }^{\text {a }}$, G. Fagherazzi ${ }^{\text {a }}$ on behalf of the Oriscav-Lux Study Group

## Major Health Behaviors \& Sleep Problems: <br> Canadian Community Health Surveys (2015-2017), N=44,911

$>$ Only half of all respondents met the recommended sleep duration (7-9 hours)
$>55 \%$ of women and $41 \%$ of men reported sleep problems
$>$ Binge drinking and smoking were associated with increased risk of sleep problems
$>$ Increased fruit \& vegetable consumption associated with lower risk of sleep problems
$>$ There is a high prevalence of sleep problems among Canadians
$>$ Sleep problems tend to cluster with unhealthy lifestyle behaviors

## Poor sleep: an emerging risk factor for CVD?



## AHA SCIENTIFIC STATEMENT

## Sleep Duration and Quality: Impact on Lifestyle Behaviors and Cardiometabolic Health



## American Heart Association adds sleep to cardiovascular health checklist

American Heart Association Presidential Advisory

## 0000

Advisory Highlights:

- American Heart Association's checklist to measure cardiovascular health is updated, now called Life's Essential $8^{\text {TM }}$, adding healthy sleep as essential for optimal cardiovascular health
- Other health and lifestyle factors in the checklist, which were part of the previous, 7item scoring tool, are nicotine exposure, physical activity, diet, weight, blood glucose, cholesterol and blood pressure.
- The new sleep metric suggests 7-9 hours of sleep daily for optimal cardiovascular health for adults, and more for children depending on age.
- The updated scoring can now be used for people ages 2 and older, and four components are measured in new ways. a new guide to assess diet, nicotine exposure replaces cigarette smoking to include electronic cigarettes (vaping) and exposure to secondhand smoke; non-HDL cholesterol is suggested instead of total cholesterol; and the blood sugar measure is expanded to include hemoglobin Alc levels.
- Life's Essential B$^{\text {TM }}$ is assessed by the online My Life Check tool, which has an updated scoring system to give users a score of up to 100 points based on an average of score for each health and lifestyle factor.

Embargoed until 4 a.m. CT / 5 a.m. ET Wednesday, June 29, 2022
DALLAS, June 29,2022 - Sleep duration is now considered an essential component for ideal heart and brain health. Life's Essential $8^{T M}$ cardiovascular health score replaces Life's simple $7^{\text {M }}$, according to a new Presidential Advisory, Life's Essential 8-Updating and Enhancing the American Heart Association's Construct on Cardiovascular Health,


AHA Life's Essential $8^{\text {TM }}$ Circle graphic

The American Heart Association's Life's Essential $8^{\text {TM }}$ image is a wheel shape with 8 wedges representing the 8 elements that are essential for cardiovascular health.

American Heart Association. Life's Essential 8
Infographic transcript (doc)
copyright American Heart Association 2022

Download ( 789.4 kB )


## Sleep Medicine

## Original Article

Sleep behaviours and multimorbidity occurrence in middle-aged and older adults: findings from the Canadian Longitudinal Study on Aging (CLSA)

```
Kathryn Nicholson ', Rebecca Rodrigues a , Kelly K. Anderson a, b,c, Piotr Wilk a, b, d,
Giuseppe Guaiana a, c, Saverio Stranges a, e, f, *
```

Approximately 70\% live with multimorbidity using the primary care definition (females: 67.9\%; males 57.9\%), whereas nearly $30 \%$ live with multimorbidity using the public health definition (females: 30.9\%; males: $24.0 \%$ ). The odds of multimorbidity were higher for participants who self-reported either short or long sleep duration, as well as dissatisfaction with sleep quality. Associations were stronger among younger age groups (45-54 years and 55-64 years). Disrupted sleep may be a risk factor for multimorbidity across sexes and age groups

Contents lists available at ScienceDirect

## Sleep Medicine

The relationship between sleep health and multimorbidity in community
 dwelling populations: Systematic review and global perspectives

Patricia Nistor ${ }^{a, *, 1}$, Brittany Chang-Kit ${ }^{\text {a, }}$, Kathryn Nicholson ${ }^{\text {a }}$, Kelly K. Anderson ${ }^{\text {a }}$, Saverio Stranges ${ }^{\mathrm{a}, \mathrm{b}}$

## Highlights

$\checkmark$ Systematic review of studies published between Jan 1990-Jan 23
$\checkmark$ Twenty-four cross-sectional and five cohort studies from 16 countries included with a total participant number of 481,862
$\checkmark$ Focus on relationship between sleep health and multiple concurrent chronic diseases
$\checkmark$ Sleep duration outside guidelines associated with multimorbidity
$\checkmark$ Poor sleep quality consistently associated with multimorbidity

Number of published articles investigating sleep and multimorbidity in community populations across years


Contents lists available at ScienceDirect
Journal of Psychosomatic Research
journal homepage: www.elsevier.com/locate/jpsychores

Relationships between sleep and internalizing problems in early adolescence: Results from Canadian National Longitudinal Survey of Children and Youth

Sophia Nunes ${ }^{\text {a }}$, M. Karen Campbell ${ }^{\text {a,b,c,d,g, Neil Klar }{ }^{\text {a }} \text {, Graham J. Reid }}$, d,e,f,g, Saverio Stranges ${ }^{\mathrm{a}, \mathrm{f}, \mathrm{g}, \mathrm{h}, *}$

Canadian Journal on Aging /
La Revue canadienne du vieillissement
www.cambridge.org/cjg

> Sleep Problems and Psychological Well-Being: Baseline Findings from the Canadian Longitudinal Study on Aging

Rebecca Rodrigues ${ }^{1}$, Kathryn Nicholson ${ }^{1}$, Giuseppe Guaiana ${ }^{1,2}$, Piotr Wilk ${ }^{1,3,4}$, Saverio Stranges ${ }^{1,5,6}$ and Kelly K. Anderson ${ }^{1,2,3}$



CLINICAL REVIEW
Interplay between social media use, sleep quality, and mental health in youth: A systematic review

Rea Alonzo ${ }^{\text {a }}$, Junayd Hussain ${ }^{\text {a }}$, Saverio Stranges ${ }^{\text {a, c, d }}$, Kelly K. Anderson ${ }^{\text {a, b, * }}$
Epidemiological observational evidence links excessive social media use to poor sleep quality and negative mental health in youth (aged 16-25)


## Article

## Does Shiftwork Impact Cognitive Performance? Findings from the Canadian Longitudinal Study on Aging (CLSA)

Rea Alonzo ${ }^{1, *}$, Kelly K. Anderson ${ }^{1,2,3}{ }^{(D}$, Rebecca Rodrigues ${ }^{1}{ }^{(\mathbb{D}}$, Neil Klar ${ }^{1}$, Paolo Chiodini ${ }^{4}{ }^{(\mathbb{D}}$, Manuel Montero-Odasso ${ }^{1,5,6}$ and Saverio Stranges ${ }^{1,7,8, *(D)}$

Int. J. Environ. Res. Public Health 2022;19:10124

> Shiftwork was significantly associated with poorer performance for executive functioning
> Our findings confirm the association between shiftwork and cognitive performance among middle-aged and older adults


## 18-64 years

## CANADIAN 24-HOUR MOVEMENT GUIDELINES

FOR ADULTS AGED 18-64 YEARS:
An Integration of Physical Activity, Sedentary Behaviour, and Sleep

## Make your whole day matter.

The Canadian 24-Hour Movement Guidelines for Adults (18-64 years) integrate recommendations for physical activity, sedentary behaviour and sleep. Following the guidelines can help you obtain health benefits and live your best life!


For health benefits, adults aged 18-64 years should be physically active each day. minimize sedentary behaviour, and achieve sufficient sleep.

A healthy 24 hours includes:


Replacing sedentary behaviour with additional physical activity and trading light physical activity for more moderate to vigorous physical activity, while preserving sufficient sleep, can provide greater health benefits.

1) Progressing towards any of these targets will result in some health benefits.

Debate

## Physical activity promotion in primary care: a Utopian quest?

Alexis Lion ${ }^{1,2}$, Anne Vuillemin ${ }^{3}$, Jane S. Thornton ${ }^{4}$, Daniel Theisen ${ }^{1}$, Saverio Stranges ${ }^{5,6,7}$, and Malcolm Ward ${ }^{8, *}$



# BRAIN HEALTH 

- A state of complete physical, mental and social well-being through a full, balanced continuous development and exercise of the brain.

V Hachinski, S Stranges, et al. Lancet Neurol 2021

## THE DEMENTIA PREVENTION/BRAIN HEALTH GROUP

Charles Alessi, Public Health England Shehzad Ali, Western U<br>Robert Andersen, Ivey School of Business Reza Azarpazhooh, Western U W David Colby, Chatham Kent Health Unit Ruthe Anne Conyngham, LHSC Mark Daley, Western U Valery Feigin, Auckland U Serge Gauthier, McGill U Jason Gilliland, Western U Moira Kapral, U of Toronto Nadia Khan, Hypertension Canada<br>Patrice Lindsay, HSFC Janet Martin, Western U Matthew Meyer, Western U Naghmeh Mokhber, Western U Kathryn Nicholson, Western U Kenneth Rockwood, Dalhousie U Kem Rogers, Western U Eric Smith, U of Calgary Sandy Steinwender, Western U Saverio Stranges, Western U Piotr Wilk, Western U Vladimir Hachinski, Western U



Population attributable fraction of potentially modifiable risk factors for dementia

Up to 40\% of dementia can be prevented


The Lancet 2020

## FINGER TRIAL- Multidomain lifestyle intervention



Mangialasche, Kivipelto et al., 2012



Kathryn Nicholson ${ }^{\text {a, }{ }^{*}}$, Tatjana T. Makovski ${ }^{\text {b }}$, Iveta Nagyova ${ }^{\mathrm{c}}$, Marjan van den Akker ${ }^{\text {d,e, } \mathrm{f}}$, Saverio Stranges ${ }^{\text {a,g }}$
${ }^{\text {a }}$ Department of Epidemiology \& Biostatistics, Schulich School of Medicine \& Dentistry, Western University, Canada
${ }^{b}$ Department of Epidemiology, Care and Public Health Research Institute (CAPHRI), Maastricht University, the Netherlands
${ }^{\text {c }}$ Department of Social and Behavioural Medicine, Faculty of Medicine, PJ Safarik University, Kosice, Slovakia
${ }^{\mathrm{d}}$ Institute of General Practice, Goethe University Frankfurt am Main, Germany
${ }^{e}$ Department of Family Medicine, Care and Public Health Research Institute, Maastricht University, Maastricht, The Netherlands
${ }^{\mathrm{f}}$ Department of Public Health and Primary Care, Academic Centre of General Practice, KU Leuven, Leuven, Belgium
${ }^{\varepsilon}$ Department of Precision Health, Luxembourg Institute of Health, Strassen, Luxembourg


## Annals of Intemal Melicine <br> Position Paper

## Addressing Social Determinants to Improve Patient Care and Promote Health Equity: An American College of Physicians Position Paper

 Colloge of Physilians"
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## MILBANK QUARTERLY

A MULTIDISCIPLINARY IOURNAL OF POPULATION HEALTH AND HEALTH POLICY

Opinion
Forty Years After Alma-Ata: At the Intersection of Primary Care and Population Health

SANDRO GALEA and MARGARETE.KRUK

## Integrating Primary Care and Public Health A Strategic Priority

Sarah Linde-Feucht, MD, Natasha Coulouris, MPH

## Primary Health Care Research \& Development 2018; 19: 378-391 doi:10.1017/S1463423617000895

RESEARCH

## Strengthening primary health care through primary care and public health collaboration: the influence of intrapersonal and interpersonal factors

Ruta K. Valaitis', Linda O'Mara ${ }^{2}$, Sabrina T. Wong ${ }^{3}$, Marjorie MacDonald ${ }^{4}$, Nancy Murray ${ }^{5}$
Ruth Martin-Misener ${ }^{6}$ and Donna Meagher-Stewart
${ }^{1}$ 'Associate Professor and Dorothy C. Hall Chair in Primary Health Care Nursing, School of Nursing, Faculty of Health Sciences, McMaster University, Hamilton ON, Canada
${ }^{2}$ Associate Professor, School of Nursing, McMaster University, Hamilton, ON, Canada
${ }^{3}$ Professor, School of Nursing, University of British Columbia, Vancouver, BC, Canada
${ }^{4}$ Professor, School of Nursing, University of Victoria, Victoria, BC, Canada
${ }^{\text {P/ Professor, School of Nursing, University of Victoria, Victoria, BC, Canada }}{ }^{5}$ Research Coordinator, School of Nursing, McMaster University, Hamilton, ON, Canada
${ }^{6}$ Professor, School of Nursing, Dalhousie University, Halifax, NS, Canada
${ }^{7}$ Associate Professor, School of Nursing, Dal housie University, Hal ifax, NS, Canada

Valaitis et al BMC Health Service Research (2018) 18:420
htitps://doiorg/10.1186/s1 2913-018-31947
https//doiorg/10.1186/s1 2913-018-31947
BMC Health Services Research

RESEARCH ARTICLE
Organizational factors influencing successful primary care and public health collaboration

Ruta Valaitis ${ }^{1{ }^{1}}$ (0, Donna Meagher-Stewart ${ }^{2}$, Ruth Martin-Misener ${ }^{2}$, Sabrina T. Wong ${ }^{3}$, Marjorie MacDonald ${ }^{4}$, Linda O'Mara' and The Strengthening Primary Health Gare through Primary Care and Public Health Collaboration Team

## International Journal of Public Health

https://doi.org/10.1007/s00038-019-01278-1

## COMMENTARY

The integration of primary care and public health to improve population health: tackling the complex issue of multimorbidity

## EDITORIALS

## Immorality of inaction on inequality

Our collective failure to reverse inequality is at the heart of a global malaise
Kate E Pickett professor of epidemiology, Richard G Wilkinson honorary visiting professor

Department of Health Sciences, University of York, York, UK; Correspondence to: K E Pickett kate.pickett@york.ac.uk



FIGURE: Degrees of Primary Care and Public Health Integration


## Big "I" Integration



## Lessons learned

$\checkmark$ Lifestyles (including poor sleep) play a major role in chronic disease
$\checkmark$ Socioeconomic determinants play a major role in chronic disease
$\checkmark$ There are widening disparities in chronic disease burden driven by SES
$\checkmark$ NCDs are an additional public health burden in LMICs
$\checkmark$ Geographic variation analyses are important for public health policy
$\checkmark$ Have we seen the end of long-term decline in CVD mortality?

## Chronic Disease Prevention: the way forward

$\checkmark$ Translate research findings in "real-world" settings
$\checkmark$ From "what works" to "how can we make this happen..."
$\checkmark$ Increase the proportion of people with ideal cardiovascular health
$\checkmark$ Combining population and high-risk strategies
$\checkmark$ Increase research focus and policy on disadvantaged subgroups
$\checkmark$ Reconfigure health systems to tackle multimorbidity burden
$\checkmark$ Need for multisectoral approaches

## Study Populations

- Western New York Health Study, USA
- Nutritional Prevention of Cancer Trial, USA
- National Health \& Nutrition Examination Survey, USA
- National Population Health Survey, Canada
- Canadian Community Health Surveys, Canada
- Canadian Longitudinal Study on Aging, Canada
- National Diet \& Nutrition Survey, UK
- Whitehall II Study, UK
- PRECISE Trial, UK/Denmark
- EPIC Study \& Olivetti Heart Study, Italy
- Demographic \& Health Surveys (DHS), LMICs
- INDEPTH-WHO-SAGE, LMICs

- ORISCAV \& EHES, Luxembourg
"The primary determinants of disease are mainly economic and social, and therefore remedies must also be economic and social."


## Geoffrey Rose




[^0]:    Naples, the beating heart of Mediterranean Italy, early 1940

[^1]:    

