

A photograph of the University of Western Ontario campus in London, Ontario. The central focus is a tall, Gothic-style stone tower with a pointed spire. The tower is surrounded by green lawns and several trees in full bloom, including vibrant pink cherry blossoms in the foreground and midground. The sky is a clear, bright blue. The entire image is framed by a blue border with a wavy, decorative top edge.


**UNIVERSITY OF
WESTERN ONTARIO
LONDON, ONTARIO**

PREVENTING DEMENTIA: CAN WE DO BETTER?

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- I ACKNOWLEDGING REALITY
- II FOCUSING ON THE TREATABLE, VASCULAR COMPONENT
- III TRYING NEW, MULTIMODAL INTEGRATED APPROACHES



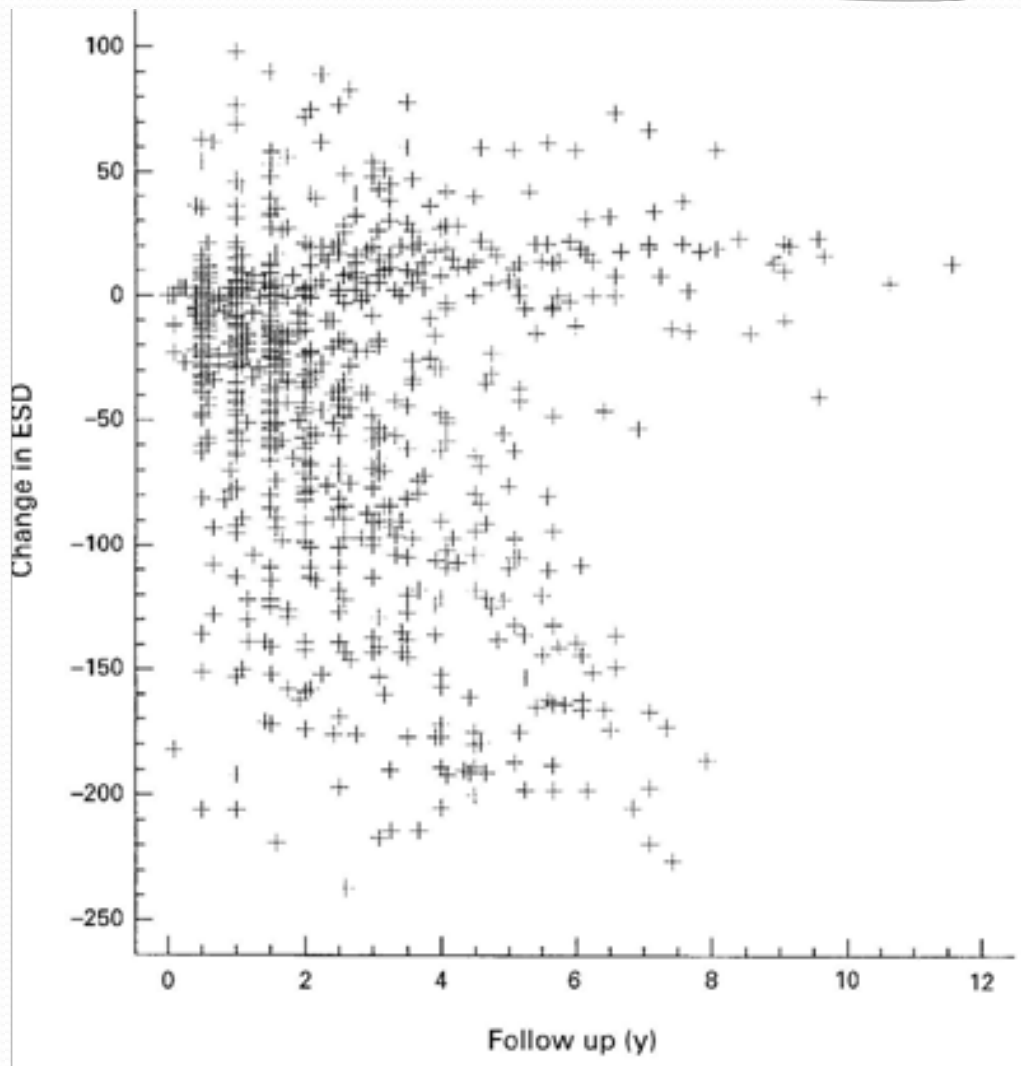
The greatest obstacle to discovery is not ignorance – it is the illusion of knowledge

Daniel J. Boorstin

THE EFFECT OF DIFFERENT DIAGNOSTIC CRITERIA ON THE PREVALENCE OF DEMENTIA

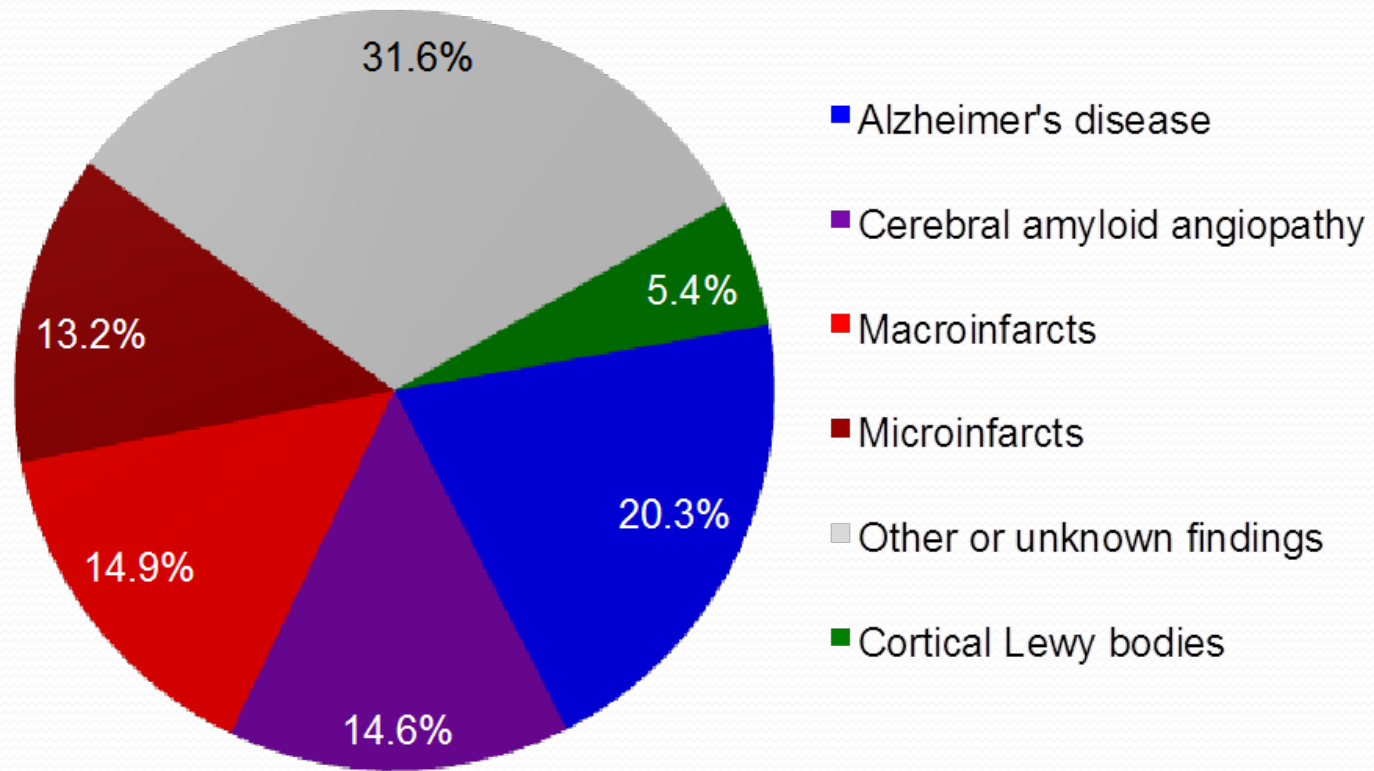
Canadian Study of Health and Ageing (n=1879)	
DSM-111	29.1%
DSM-III-R	17.3%
DSM-IV	13.7%
ICD-9	5.0%
ICD-10	3.1%

Erkinjuntti T et al. N Engl J Med 1997;337:1667-74



Follow-up of patients initially diagnosed as having Alzheimer disease clinically, but neuropsychological testing and brain imaging

Percent Population Attributable Risk of Dementia of Vascular and Non-Vascular Pathological Findings



Hachinski & Sposato (unpublished)

Original Contributions

National Institute of Neurological Disorders and Stroke- Canadian Stroke Network Vascular Cognitive Impairment Harmonization Standards

Vladimir Hachinski, MD, DSc; Costantino Iadecola, MD;
Ron C. Petersen, MD, PhD; Monique M. Breteler, MD, PhD;
David L Nyenhuis, PhD; Sandra E. Black, MD; William J. Powers, MD;
Charles DeCarli, MD; Jose G. Merino, MD; Raj N. Kalaria, PhD, FRCP;
Harry V. Vinters, MD; David M. Holtzman, MD; Gary A. Rosenberg, MD;
Martin Dichgans, MD; John R. Marler, MD; Gabrielle G. Leblanc, PhD

Background and Purpose—One in 3 individuals will experience a stroke, dementia or both. Moreover, twice as many individuals will have cognitive impairment short of dementia as either stroke or dementia. The commonly used stroke scales do not measure cognition, while dementia criteria focus on the late stages of cognitive impairment, and are heavily biased toward the diagnosis of Alzheimer disease. No commonly agreed standards exist for identifying and describing individuals with cognitive impairment, particularly in the early stages, and especially with cognitive impairment related to vascular factors, or vascular cognitive impairment.

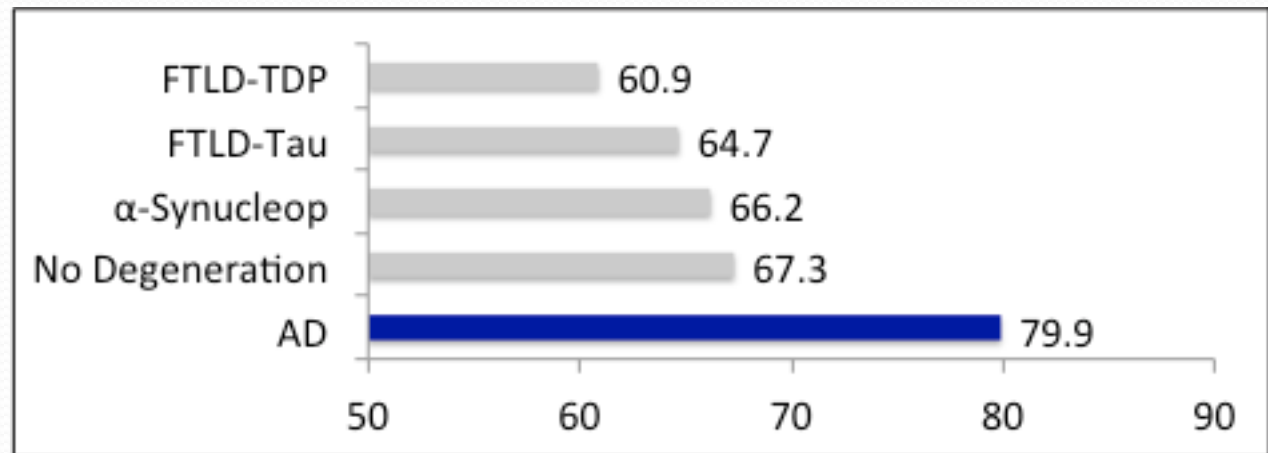
Stroke. 2006;37:2220-2241

Contribution of Cerebrovascular Disease in Autopsy Confirmed Neurodegenerative Disease Cases

National Alzheimer's Coordinating Centre
Database 6 205 autopsy cases

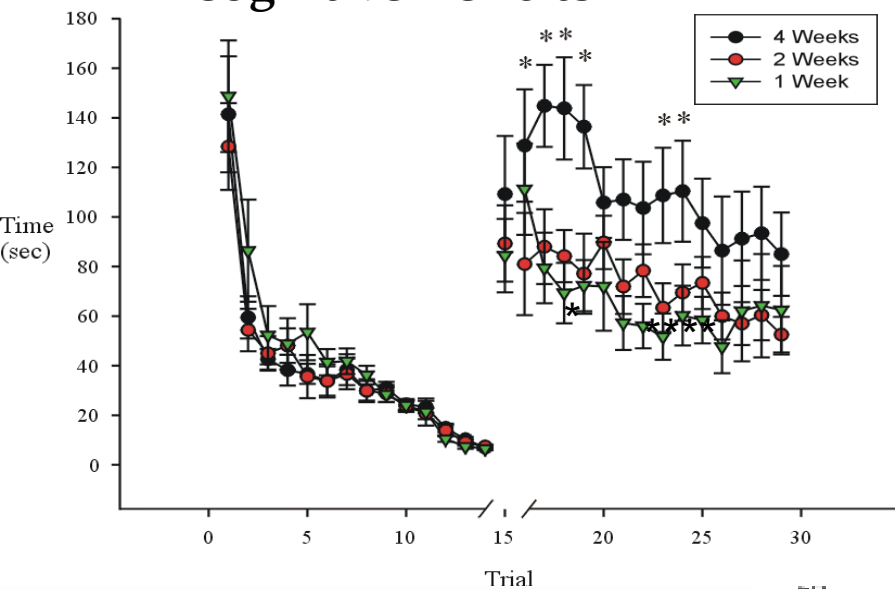
Prevalence of
Vascular Pathology
(%)

Vascular findings reaching or
not a threshold sufficient
enough to contribute to
clinical status



Preliminary Data and Survivability

Cognitive Deficits



Pathology GFAP

Control



Endo



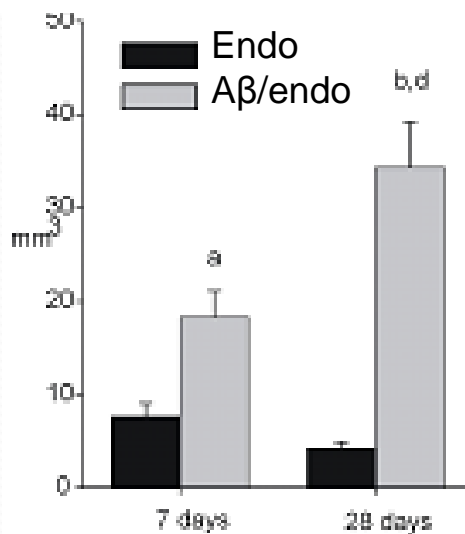
Ab



Ab &
Endo

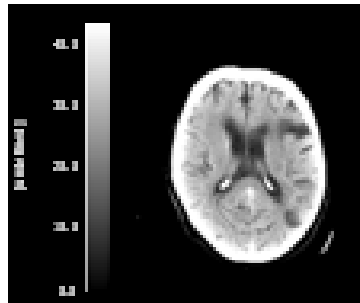


OX-6

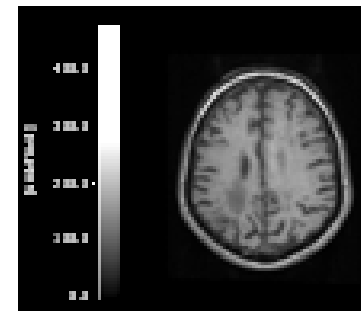


Infarct Size

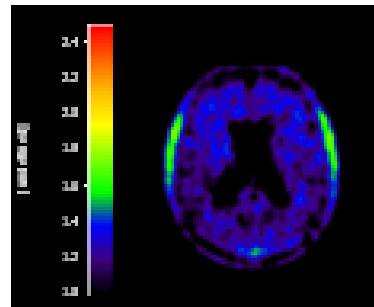
Patient 1 (left cortical stroke)



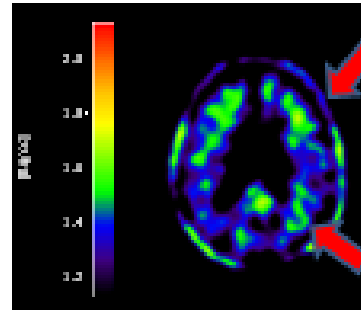
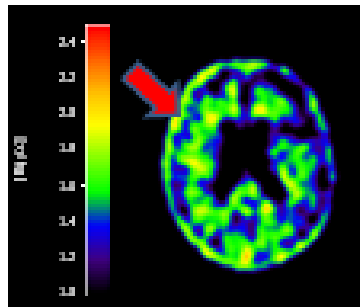
Patient 2 (right cortical stroke)



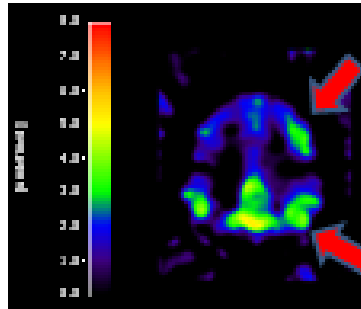
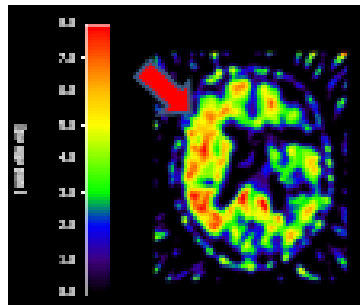
Average PK-11195 uptake in controls



Inflammation (PK11195-PET)



Amyloid (PIB-PET)




Two patients with cortical strokes, demonstrating widespread increased neuroinflammation (middle row) and corresponding amyloid deposits (lower row) 3 months after the stroke. Both patients exhibited lasting post-stroke cognitive impairment.

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Main Proposed Risk & Protective Factors Common for Stroke & Dementia

Non-modifiable	Modifiable	
Risk Factors	Risk Factors	Protective Factors
Advanced age	Cerebrovascular disease/stroke	High education
Genetic factors (Apo E4)	Cardiovascular diseases	Physical activity
Family history	Hypertension	Active lifestyle
	Hypercholesterolemia	Alcohol consumption
	Obesity	Antioxidants
	Diabetes	Fish oils
	Smoking	Antihypertensives
	Homocysteine	Statins
	Psychosocial stress/depression	
	Atrial fibrillation (added)	Anticoagulation (added)



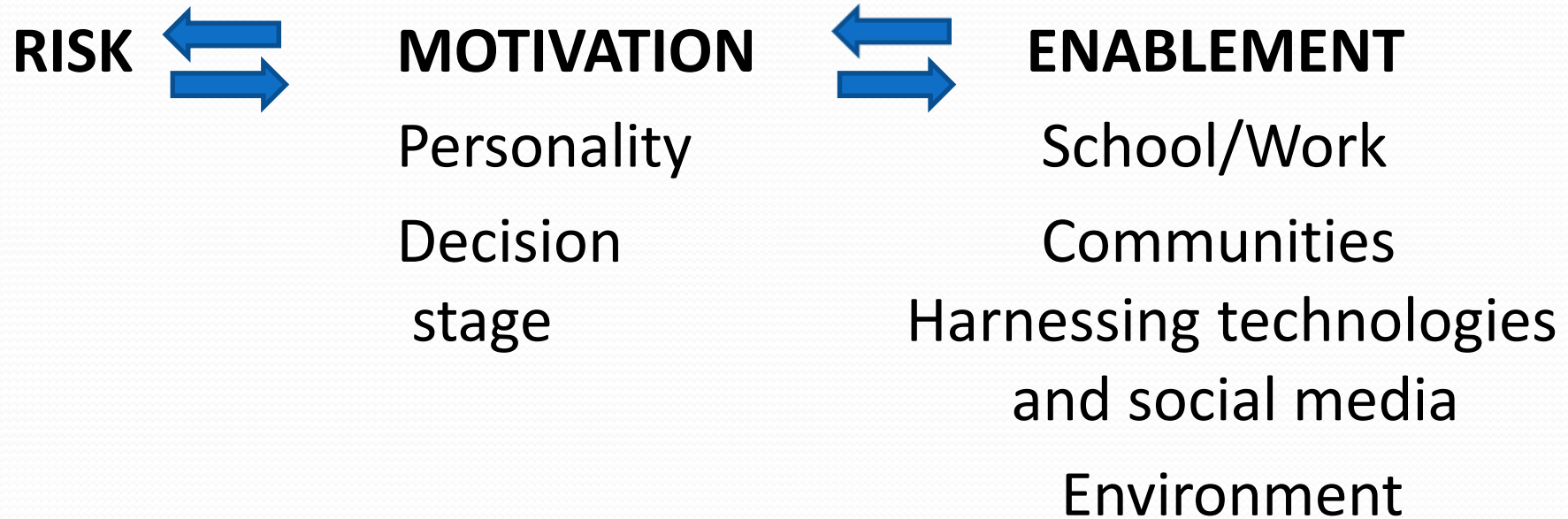
....no RCT's that investigated overall blood pressure control, weight reduction, smoking cessation or other interventions related to reduction of vascular risk factors that may.....reduce cognitive decline

Naqvi R. et al. CMAJ 2013;185:881-885

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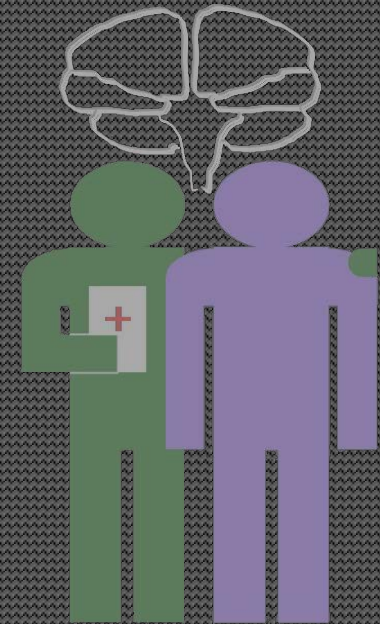
3 STEPS IN PREVENTION





PARTNERS

A Canadian Multi-Center, Randomized, Controlled, Open-Labelled, Blinded Adjudication Clinical Trial



PARTNERS



CIHR IRSC
Canadian Institutes of Health Research
Instituts de recherche en santé du Canada



Canadian Stroke Network
Réseau canadien contre
les accidents vasculaires cérébraux



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