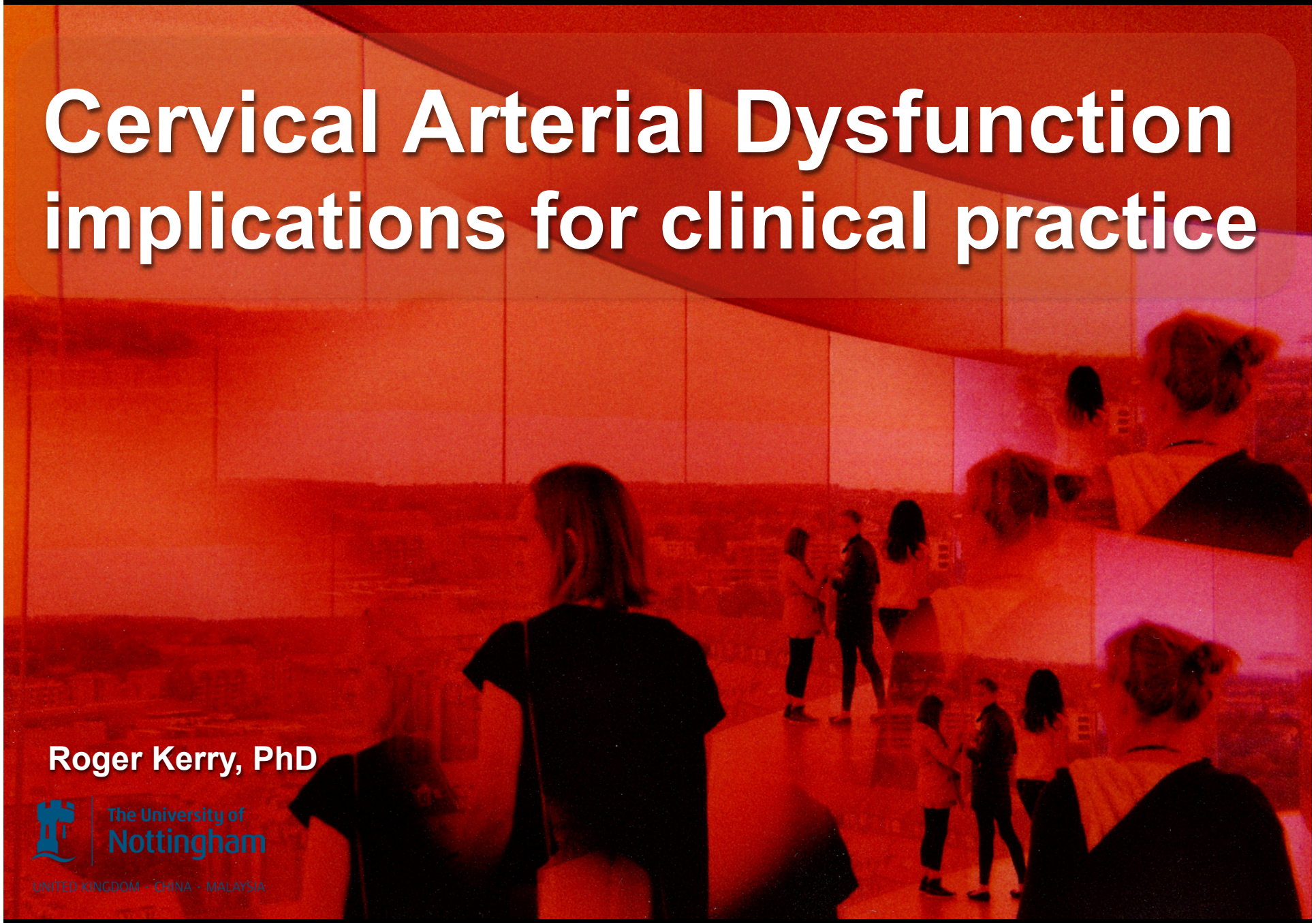
Cervical Arterial Dysfunction
implications for clinical practice

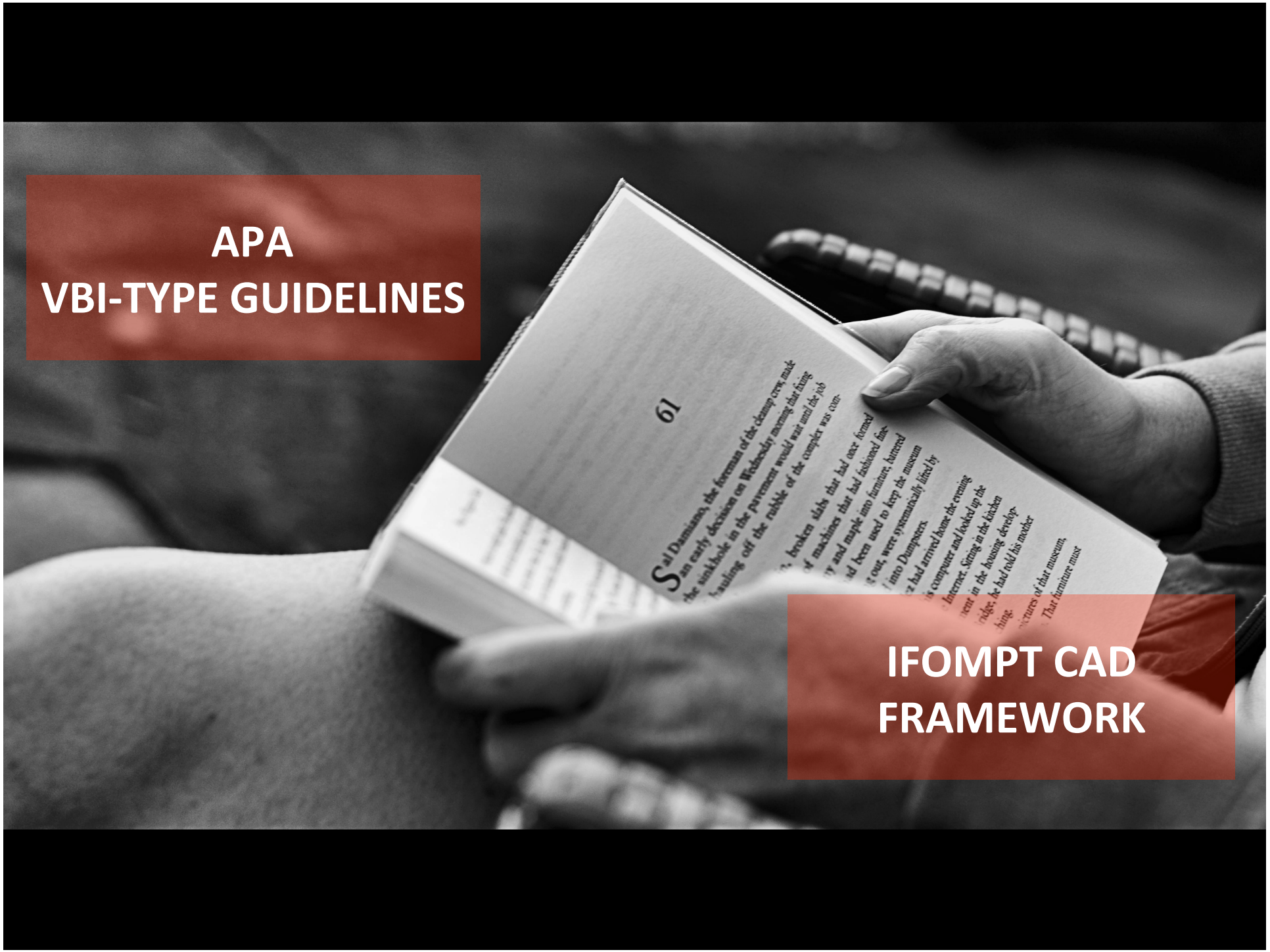


Roger Kerry, PhD

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Image: Aarhus, Richard PJ Lambert

OUT WITH THE OLD
...IN WITH THE NEW


APA
VBI-TYPE GUIDELINES
IFOMPT CAD
FRAMEWORK

EXCELLENCE IN OMT
IFOMPT
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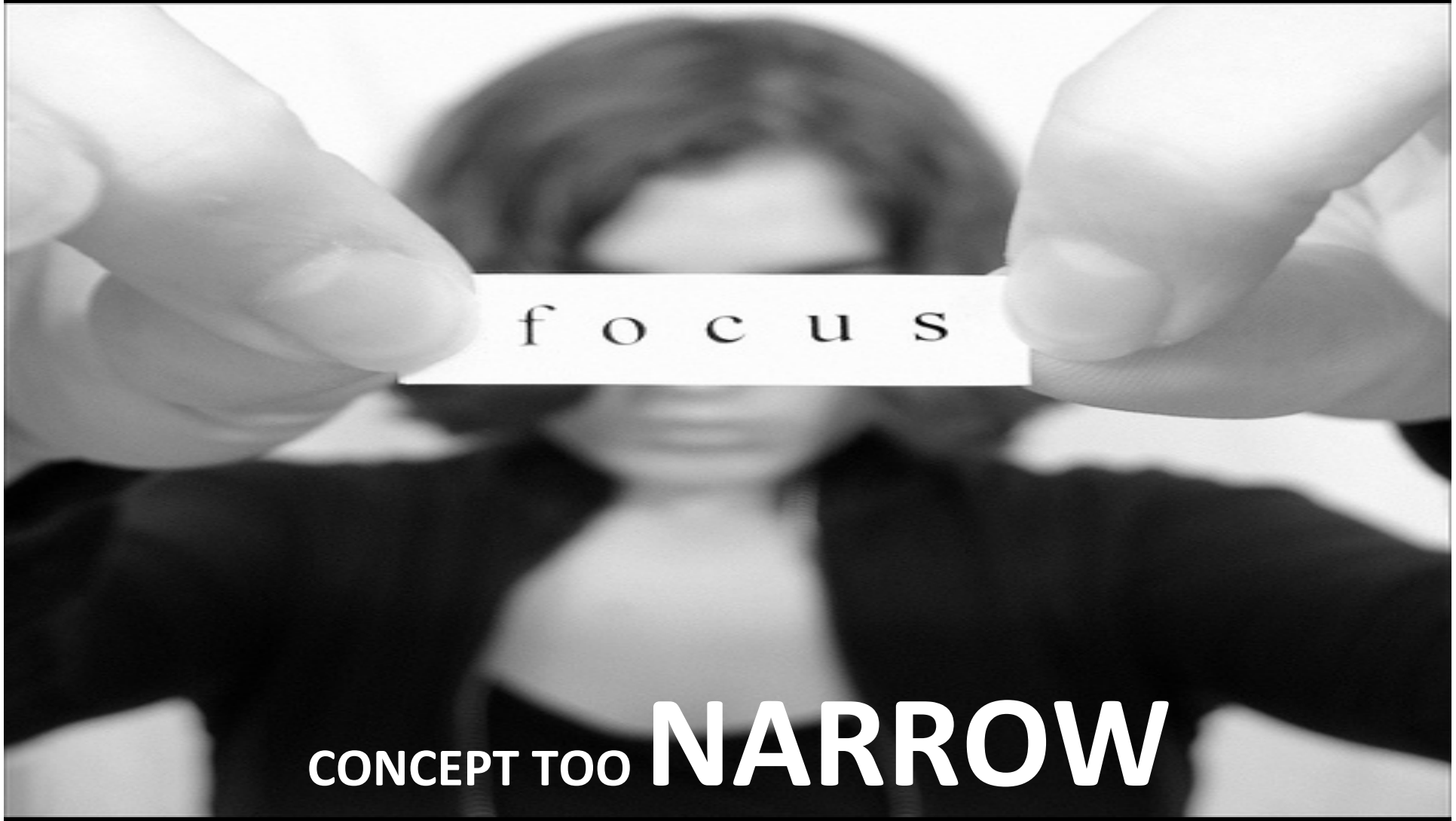
NEW ZEALAND
VIEW MAP

THE PROBLEM



CONCEPT TOO **NARROW**

LOW SCORE
D 1 A 1 T 1 A 1

Traditional tests are poor (+ve 'VBI' test' = 0.006% chance of having stroke)
Risk of stroke following HVT is small (AR 0.005%)
Risk of non-HVT interventions > HVT
What's the data saying?

TIME TO DRAW A BIGGER PICTURE

14

The AETIOLOGY of vascular disorders can be thought of on a **continuum**:

TWEETS 28 | FOLLOWING 152 | FOLLOWERS 71 | LIKES 47

Chris Worsfold
@ChrisWorsfold1 FOLLOWS YOU

Physiotherapist specialising in neck pain. The Tonbridge Clinic. Kent Neck Pain Centre.

Tonbridge, England
uk.linkedin.com/pub/chris-wors...

Tweet to | Message

Tweets | Tweets & replies | Photos & videos

Chris Worsfold @ChrisWorsfold1 · Nov 11

Nurse wins damages in massage and CAD case kentonline.co.uk/ashford/news/b… @TaylorAlanJ @RogerKerry1 @MartinDocherty2 @neiljlangridge @c_hebron

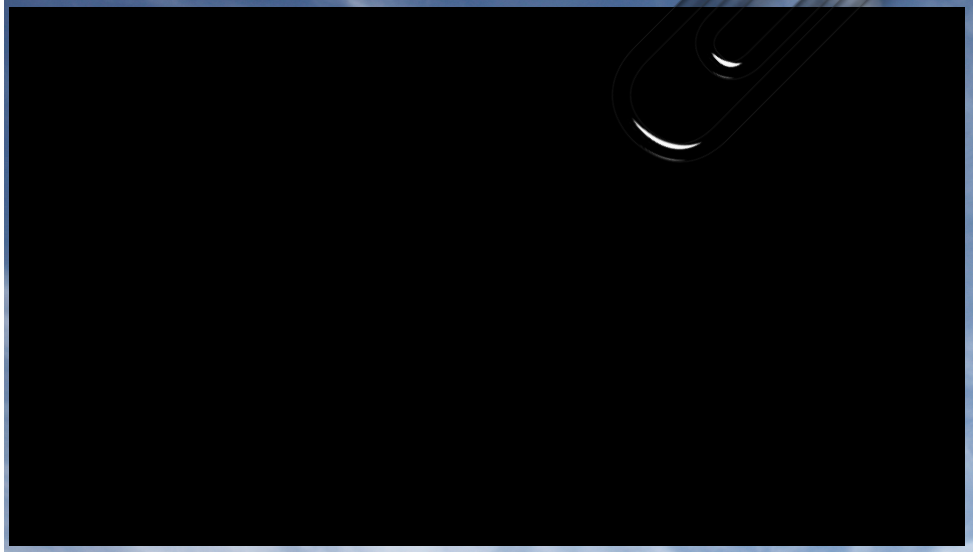
4 5

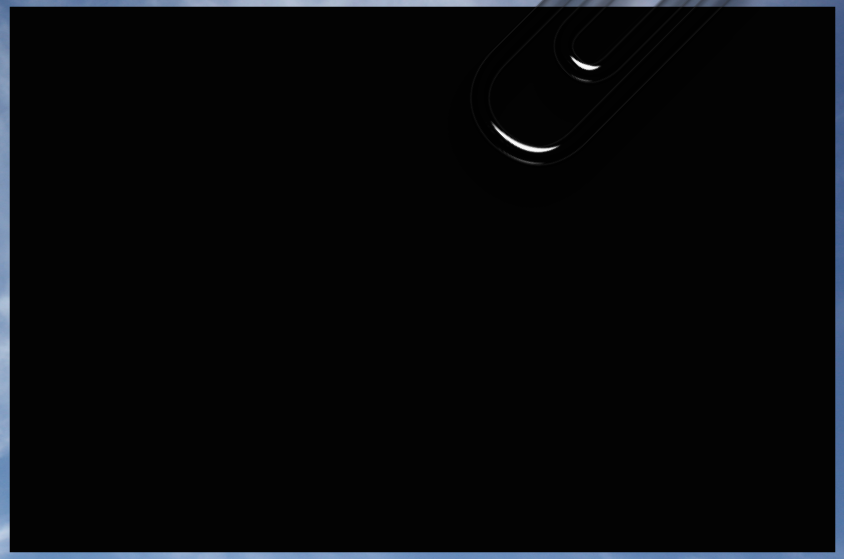
HVT

[redacted]

[redacted]

PASSIVE EXTENSION





Manual Therapy 20 (2015) 614–622

Contents lists available at ScienceDirect

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journal homepage: www.elsevier.com/math

Original article

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Denmark Denmark Denmark Denmark Denmark Denmark Denmark Denmark Denmark Denmark Denmark Denmark Denmark Denmark

Physical Activity Country Card: Denmark

Capital	Copenhagen
Inhabitants (2013)	5,613,706
Life expectancy (2012)	80
GINI inequality index (2011)	0.25
Human Development Index (2013)	0.900
Literacy rate (2003)	99%
Deaths by non-communicable diseases	90%

Deaths related to physical inactivity

» 9.4% of all deaths in Denmark are due to inactivity.

Surveillance and policy status

Physical activity plan

☑ Yes ☐ No

» Name:
Healthier life for all.

National survey

☑ Yes
- ☑ First survey: 2010
- ☑ Most recent survey: 2013
- ☑ Next survey: 2017

☐ No

Prevalence of Physical Activity | Age 18+ years

♂+♀ 76%

♀ 74%

♂ 78%

Research metrics (PubMed search in 2013)

- Articles related to Physical Activity and Public Health = 68
- Number of active researchers =314
- Average connections (shared papers) among authors =8.8
- Articles per million people =12.007
- Researchers per million people =55.446
- Identified publishing groups = 24

» Contribution of 2.31% to physical activity research worldwide in 2013.

For description of the indicators and data sources: www.globalphysicalactivityobservatory.com/appendix

Icons by Freepik

Contact Information

Name:
Lars B Christiansen

Institution:
University of Southern Denmark
Institute of Sports Science and Clinical Biomechanics
Odense Denmark

ISPAH

Global Observatory for Physical Activity GoPA

A global movement for movement

Moving professionals. Moving nations. Moving lives.

Open to everyone, a community of practice:

- learning together
- brought to life by working together
- held together through passion and the value of collective experiences

British Journal of
Sports Medicine

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Editorial

Movement for movement: exercise as everybody's business?

Ann B Gates[1], Roger Kerry[2], Fiona Moffatt[3], Ian K Ritchie[4], Adam Meakins[5], Jane S Thornton[6], Simon Rosenbaum[7, 8], Alan Taylor[9]

Author affiliations +

http://dx.doi.org/10.1136/bjsports-2016-096857

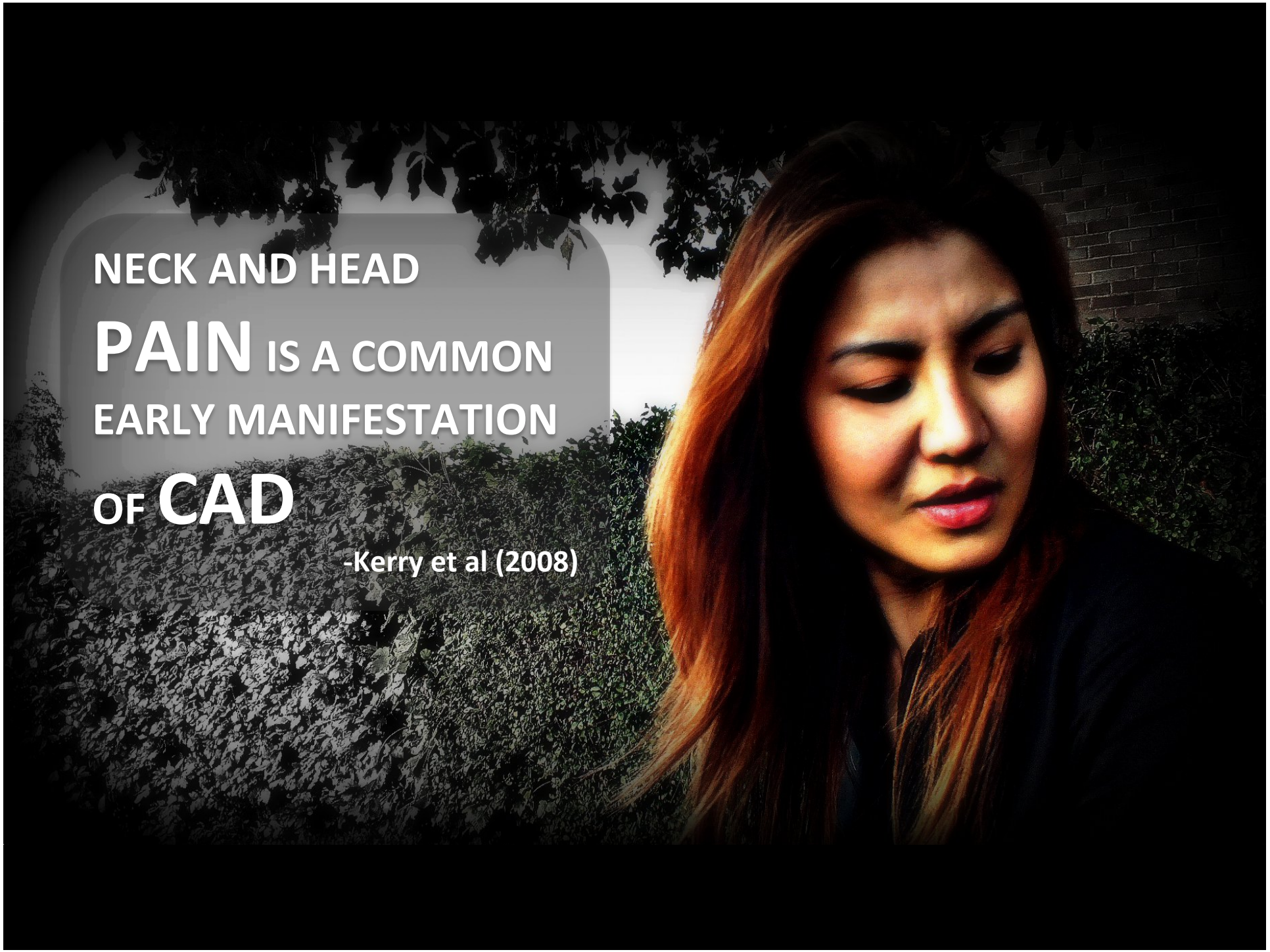
Statistics from Altmetric.com

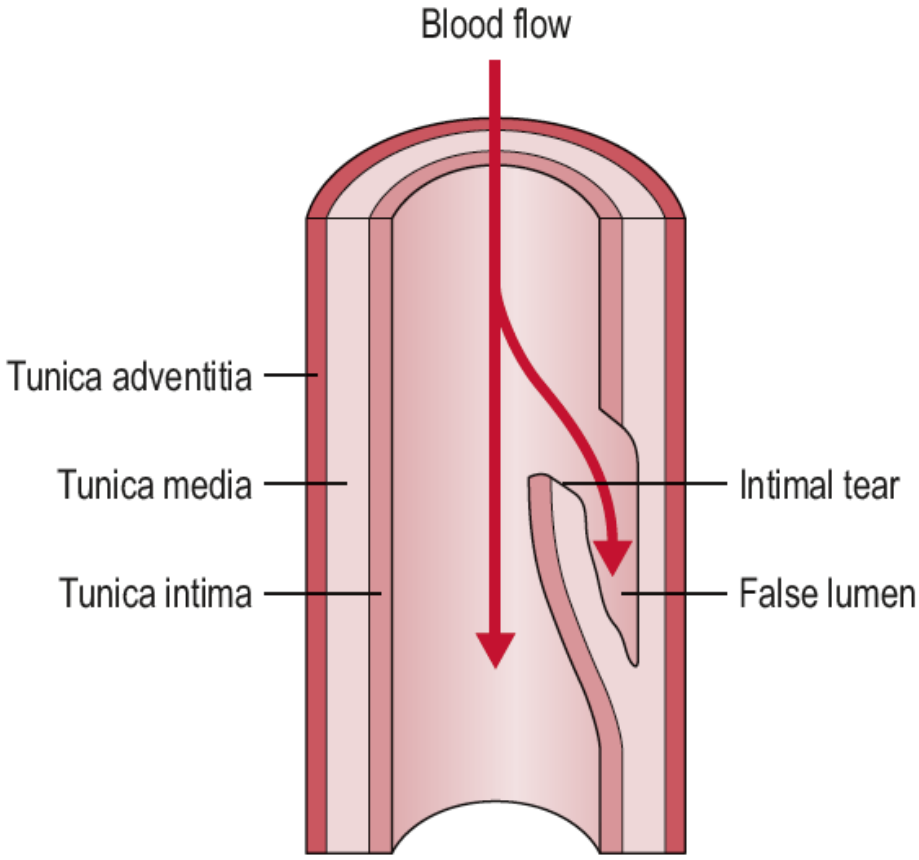
Blogged by **1**
Tweeted by **604**
On **13** Facebook pages
Mentioned in **1** Google+ posts

15 readers on Mendeley

Skiffle Show
Strike up a tune ...

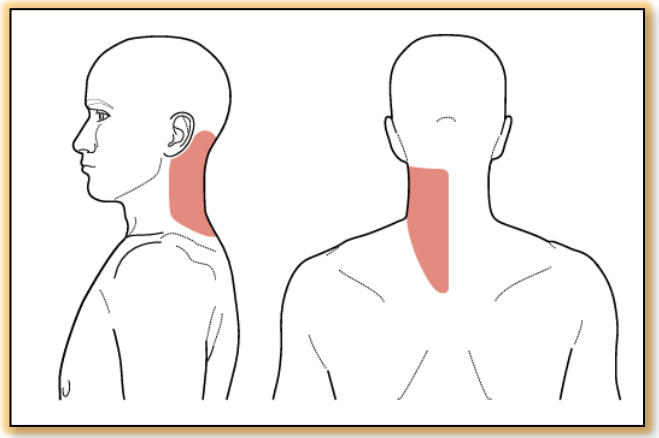
TIME TO DRAW A BIGGER PICTURE

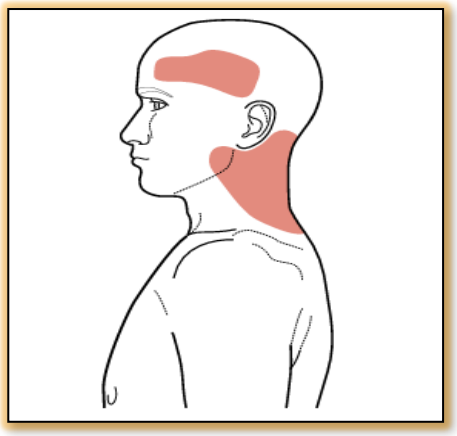

NECK AND HEAD
PAIN IS A COMMON
EARLY MANIFESTATION
OF CAD
-Kerry et al (2008)

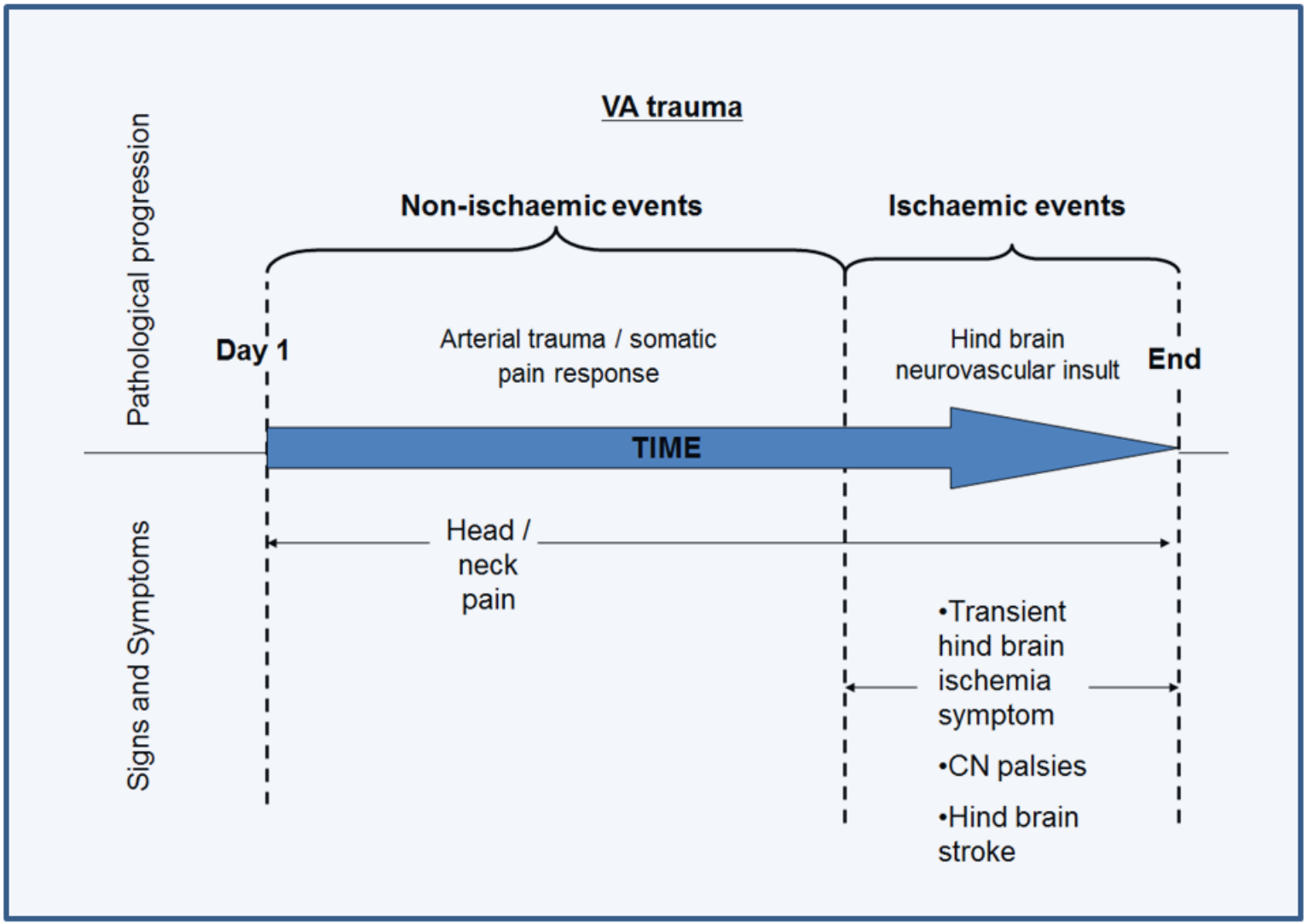

Blood flow
Tunica adventitia
Tunica media
Tunica intima
Intimal tear
False lumen

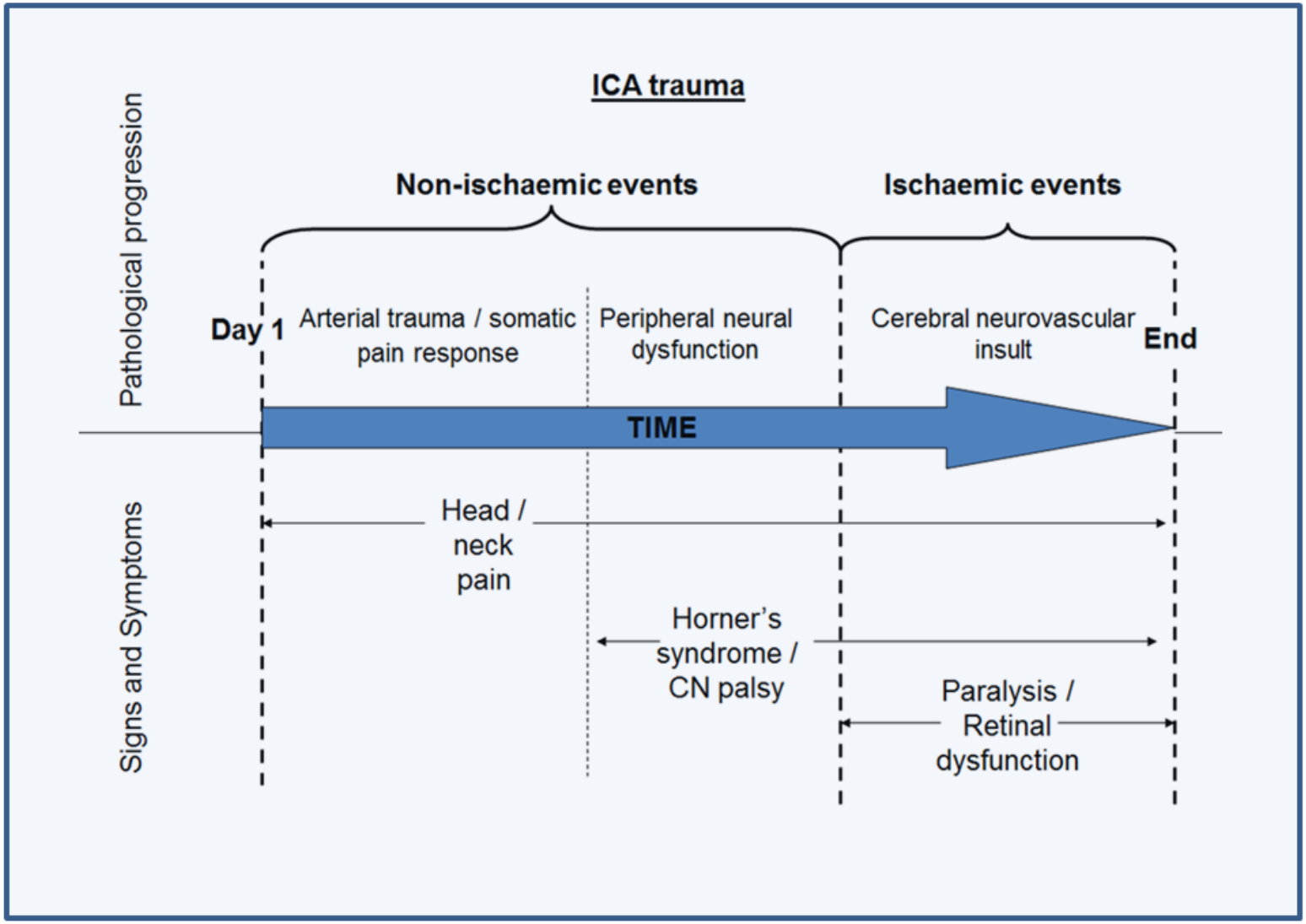
Other processes and terms

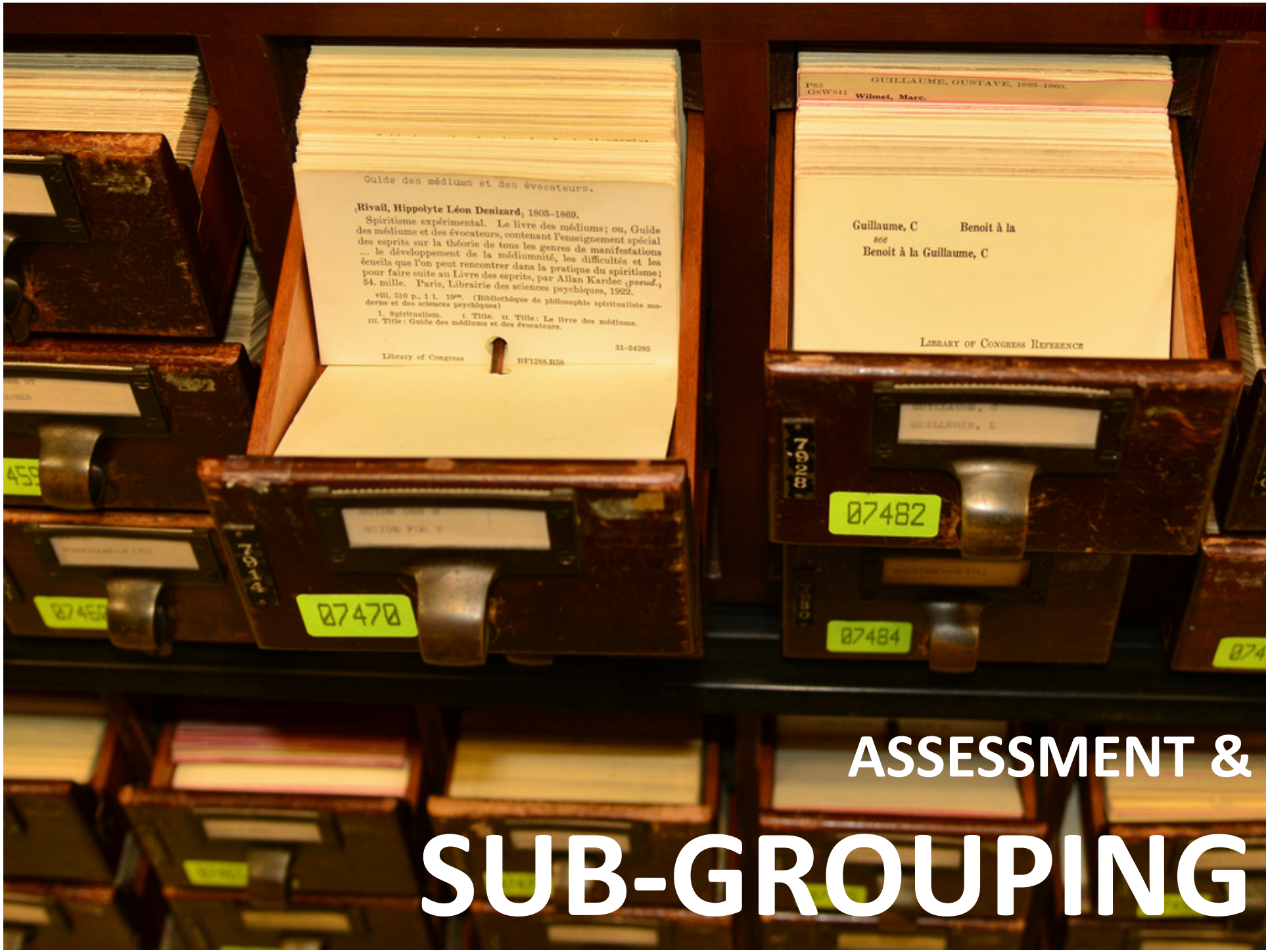
- ATHEROSCLEROSIS ✓
- STENOSIS ✓
- THROMBOSIS ✓
- EMBOLUS ✓
- ISCHAEMIC ✓
- ANEURYSM ✓





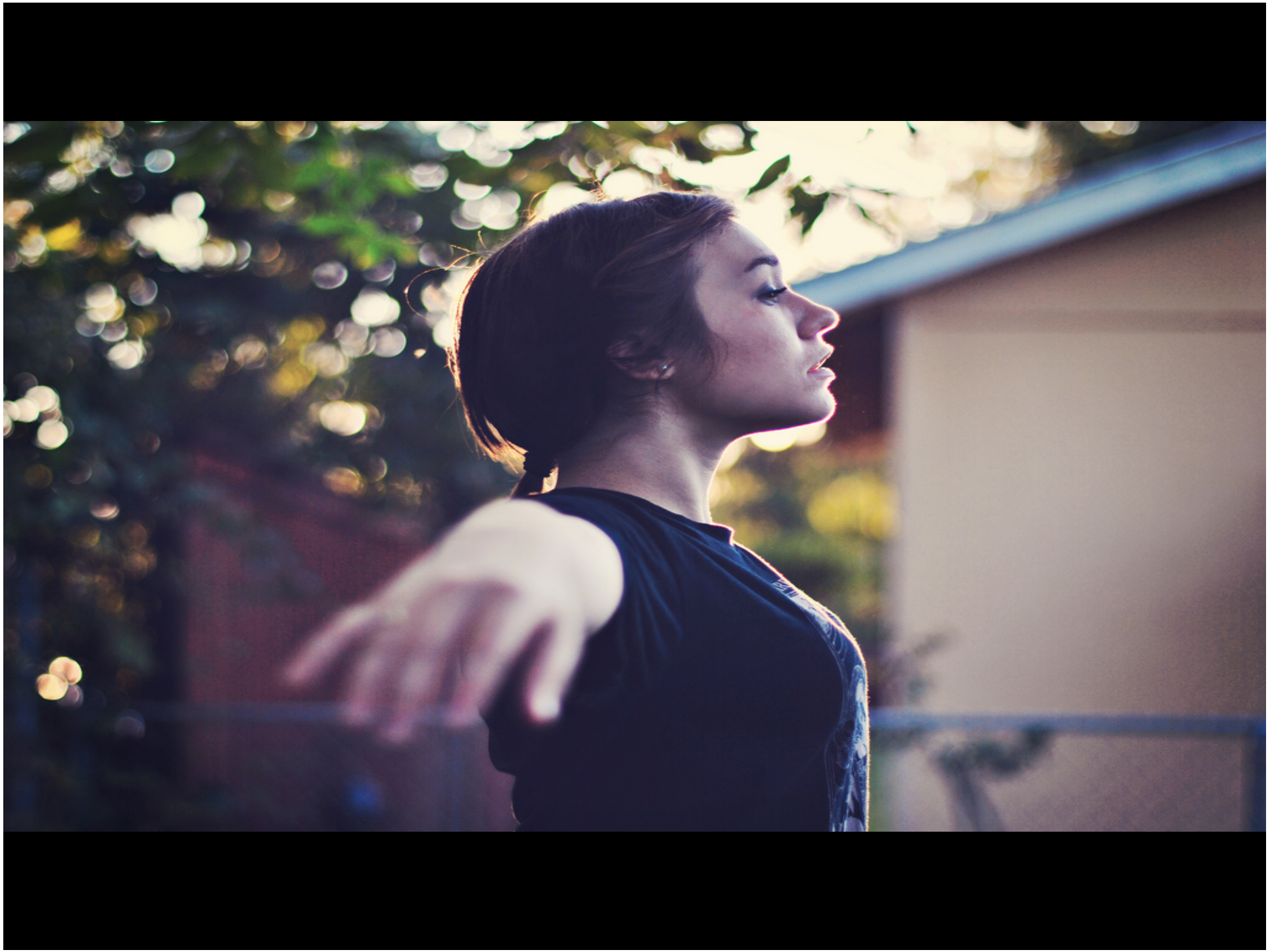

VA trauma
Pathological progression
Non-ischaemic events
Ischaemic events
Day 1
Arterial trauma / somatic pain response
Hind brain neurovascular insult
End
TIME
Signs and Symptoms
Head / neck pain
•Transient hind brain ischemia symptom
•CN palsies
•Hind brain stroke


ICA trauma
Pathological progression
Non-ischaemic events
Ischaemic events
Day 1
Arterial trauma / somatic pain response
Peripheral neural dysfunction
Cerebral neurovascular insult
End
TIME
Signs and Symptoms
Head / neck pain
Horner's syndrome / CN palsy
Paralysis / Retinal dysfunction



ASSESSMENT & SUB-GROUPING

HISTORY Identifying CAD risk factor



PHYSICAL EXAMINATION Identifying CAD risk factors

Blood Pressure

Eye examination

Cranial Nerves

Gait / proprioception

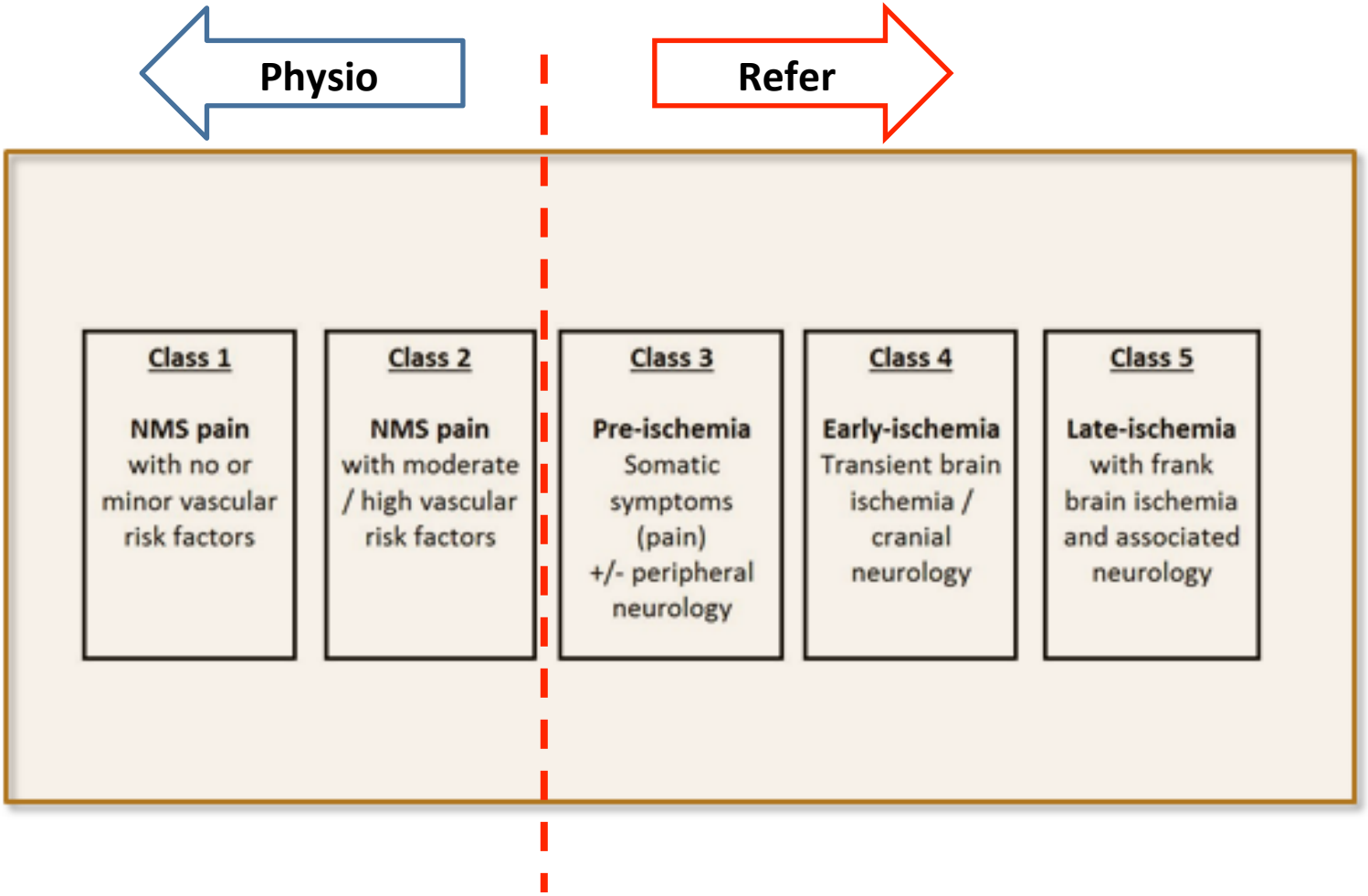
Functional positional tests / other

THE RESULTS OF BLOOD PRESSURE TESTING MAY PROVIDE DIRECTION FOR MANAGEMENT OF PATIENTS
-Taylor & Kerry (2013)

ENHANCE ASSESSMENT…WITH CRANIAL NERVE AND EYE EXAMINATION
-Taylor & Kerry (2010)

The Future
NEXT EXIT

The Nottingham CAD Classification Model (nCAD)

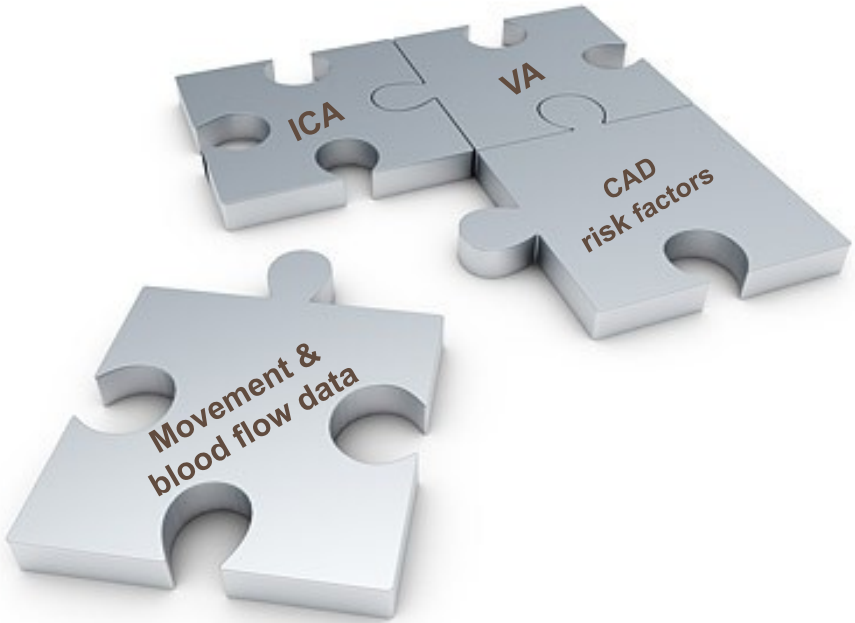


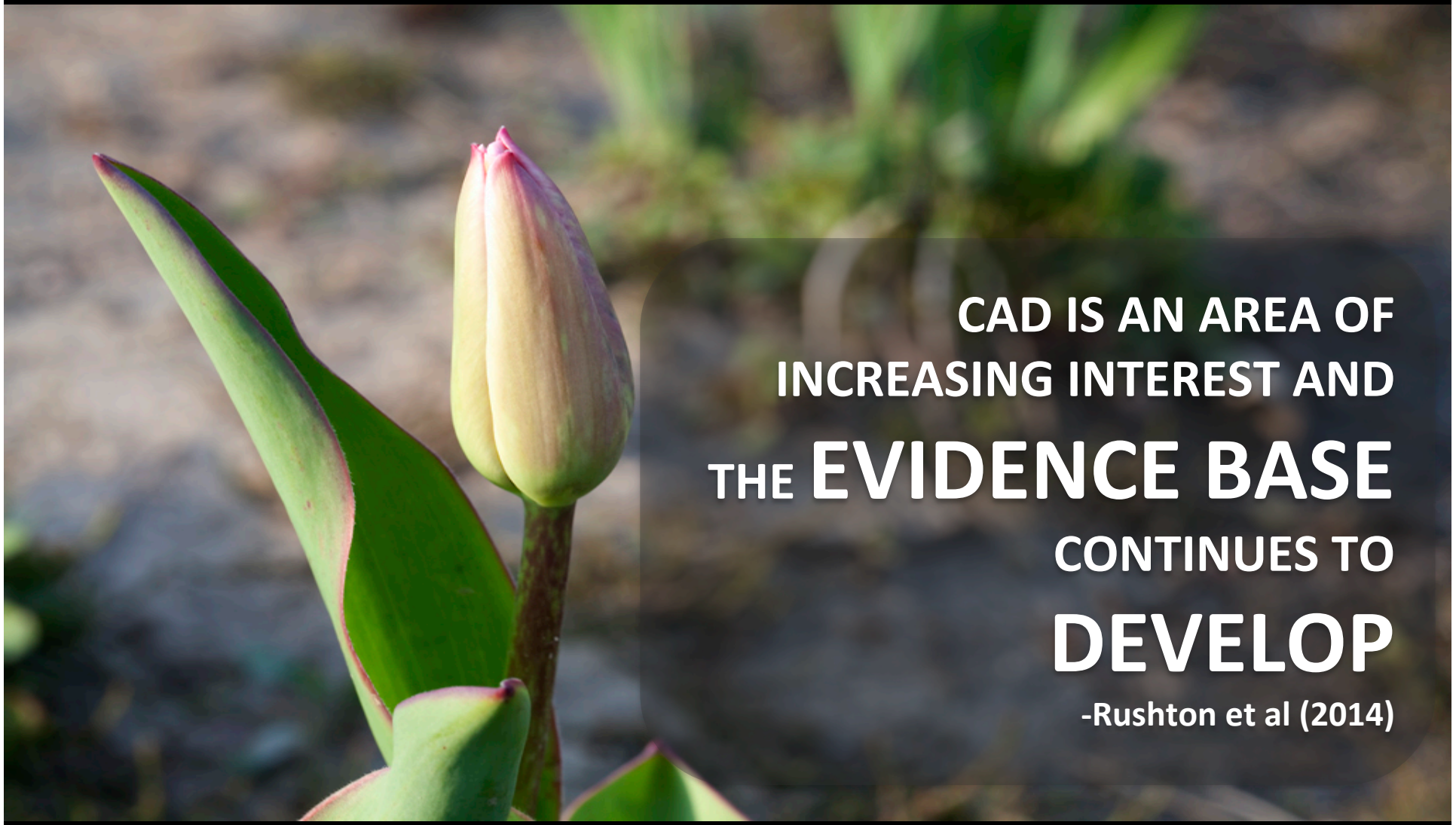
INTERVENTIONS

So what can we do with these folk?

Class 1	Class 2
NMS pain with no or minor vascular risk factors	**NMS pain** with moderate / high vascular risk factors

What is our reasoned framework for parameters of practice?




CAD IS AN AREA OF
INCREASING INTEREST AND
THE EVIDENCE BASE
CONTINUES TO
DEVELOP
-Rushton et al (2014)

DO NOT REMOVE THIS TAG!
WARN CHILDREN OF THE RISK OF DEATH
BY ELECTRIC SHOCK!
20 V
10 V

Image: Aarhus, Neil Cummings