

NSC Projects J: Enhancing recovery from stroke using electrical stimulation



BACKGROUND: What approaches can be taken to reduce impact of stroke?

1) Primary Prevention – reducing the likely impact of risk factors (aim of Project I Health and Wellness Coaching)



- 20 NZers a day experience stroke
- 1/3 survive with some degree of disability
- 60,000 stroke survivors in NZ
- Incidence of stroke in Māori and Pacific people 1.5 times greater than NZ European population
- Māori have stroke on average 5 years younger than European
- Physical disability and cognitive decline go hand in hand

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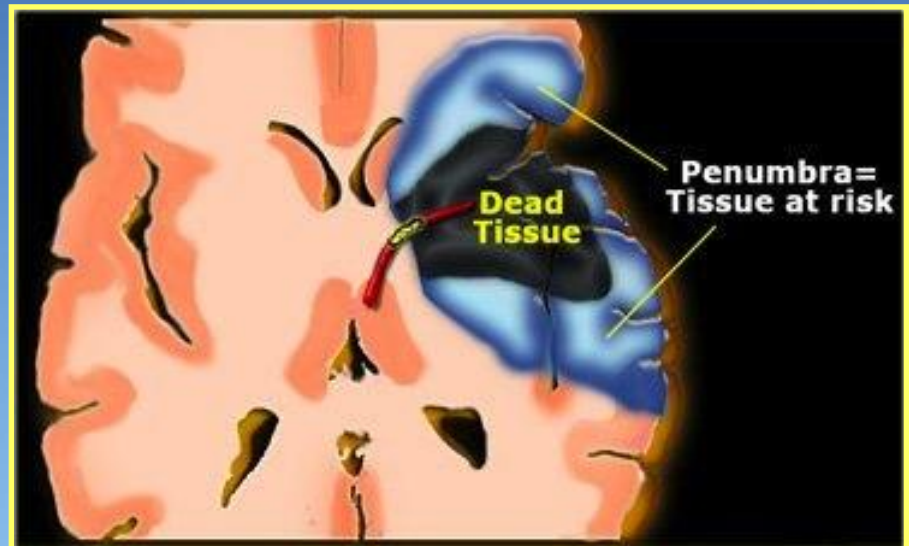
2) Protection



3)

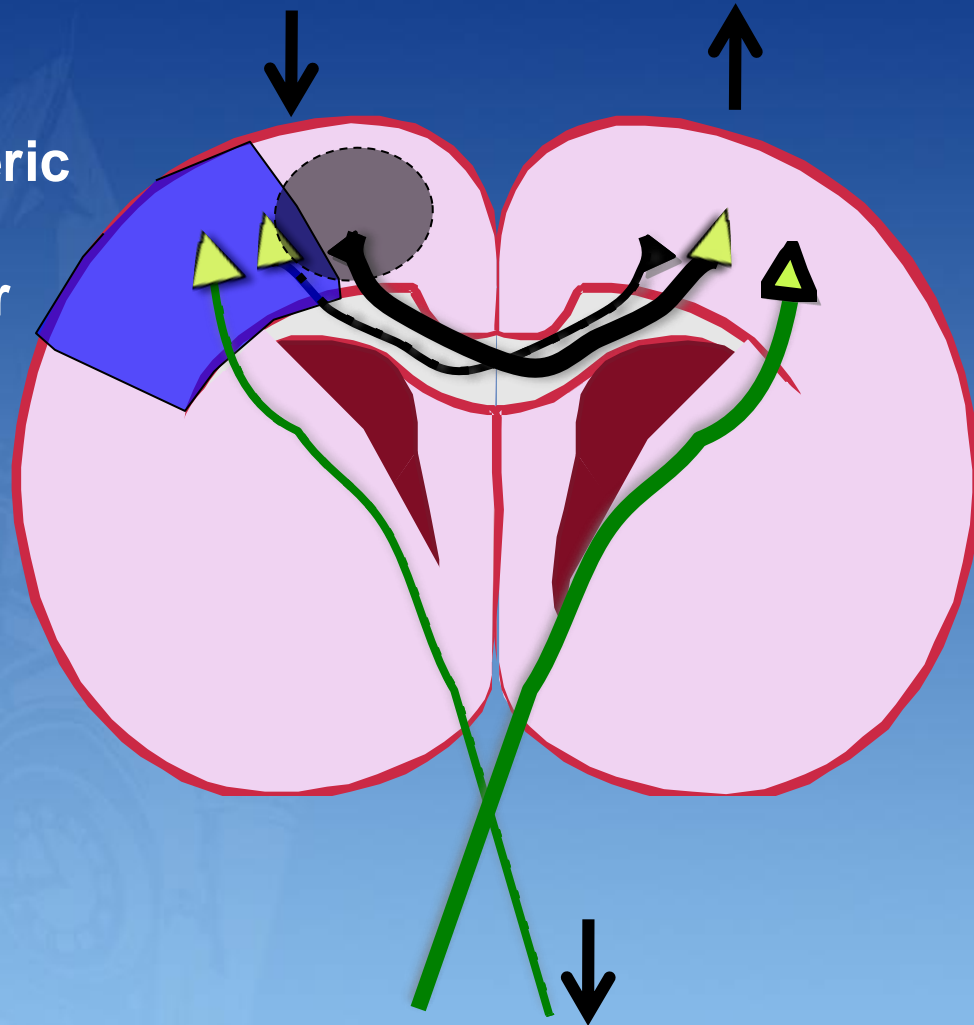


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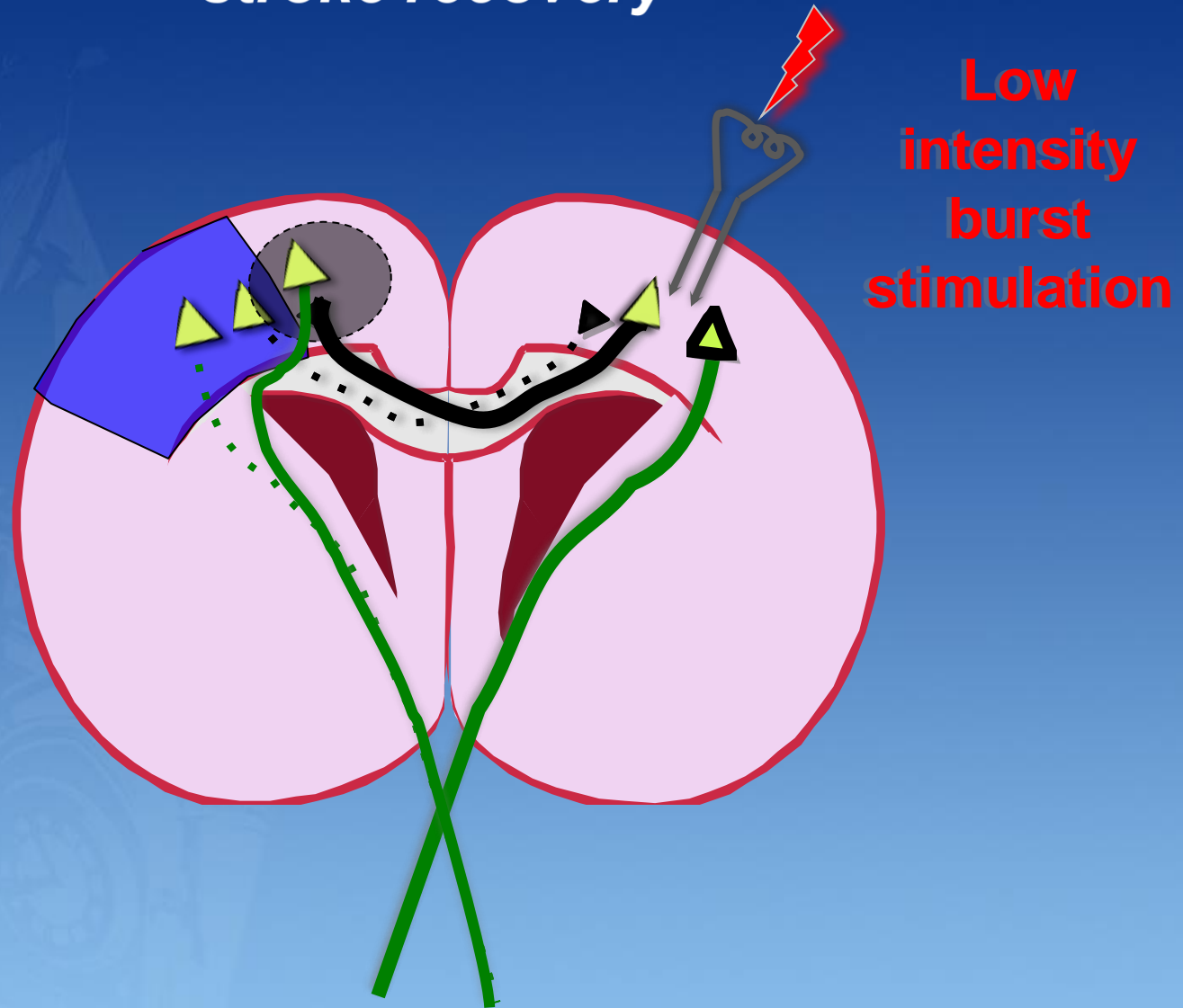
Stroke – recovery made worse by increased inhibition

- Normal interhemispheric balance is disrupted after stroke



Increased Inhibition may hamper stroke recovery

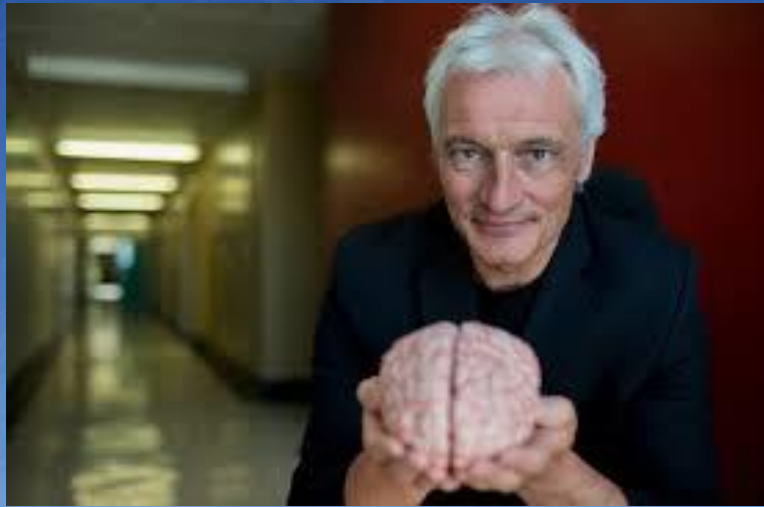
Relieving interhemispheric inhibition to improve stroke recovery



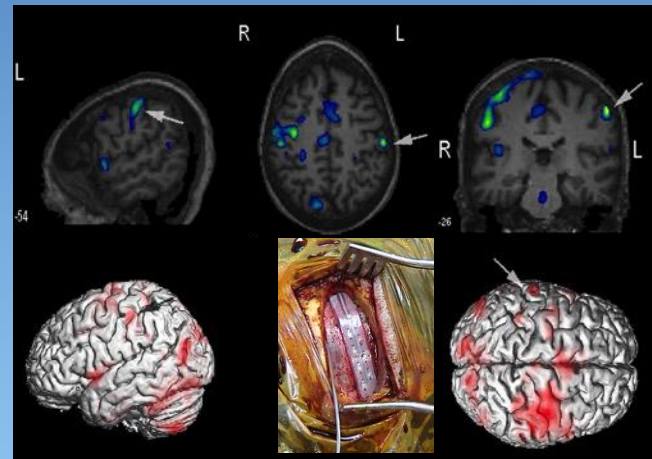
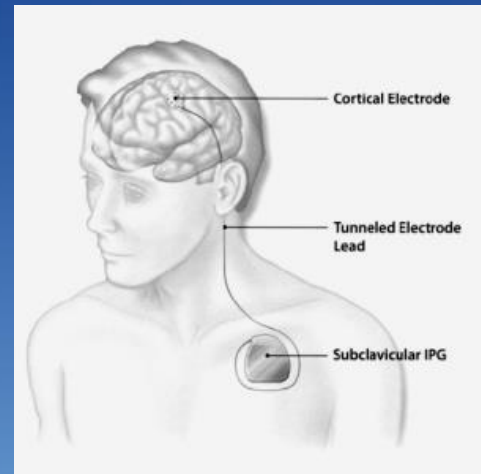
What are we aiming to do?

Feasibility and safety trial of use of electrical stimulators to improve rehabilitation following stroke

– Assoc Prof John Reynolds, Dr Jon Shemmell, Assoc Prof Leigh Hale



Professor Dirk De Ridder
Neurological Foundation Chair in
Neurosurgery



Implanted electrical stimulators to augment stroke recovery

- **By end of 2018: the use of implanted electrical stimulators and burst stimulation application has been proven safe and feasible for a range of types of stroke.**
- **By end of 2018: a multicentre clinical trial is underway, determining the efficacy of implantable pulse generators to improve upper limb function and general wellbeing after cortical or subcortical stroke**

Potential linkages – medium to long term synergies

- This Project is considered as perhaps 'disconnected' and high risk, but has tremendous potential in terms of reducing dependence on support services and maintaining independence in the longer term
- Project A explores impact of the shift from home ownership to rental accommodation on wellbeing and independence - maintaining physical and cognitive functioning of people living with stroke, allows them to remain in and maintain their ability to stay in their own homes whether rented or owned –would need to study outcomes in Phase II
- Project I – those recruited who do experience stroke may be candidates for this therapy

Additional slides if needed



Health and Wellness Coaching (HWC)

- HWC is an innovative, structured, patient-focused multi-dimensional psychological intervention designed to motivate participants to adhere to recommended medication and lifestyle changes
- By end of 2018: will deliver robust evidence on effectiveness of HWC for primary stroke and cerebrovascular disease prevention (measures reduction in absolute CVD risk and changes in specific lifestyle related outcomes).
- By end of 2018: will inform ways of improving the implementation of HWC intervention through identifying evidence of barriers and facilitators for uptake of the HWC intervention in different ethnicities

Stroke – risk factors

Major risk factors which are amenable to modification:

High blood pressure, smoking, diabetes, high LDL cholesterol, low HDL cholesterol

Other likely risk factors:

Poor diet, lack of exercise, obesity, alcohol and drug abuse

Prevention?:

Reducing risk factors – 80% of strokes are preventable!

Project I - assess whether Health and Wellness Coaching (HWC) is effective in reducing risk of primary stroke - investigate across ethnic groups

