

# Editorial

Dissemination reports are concise informative reports of health-related research supported by the Health and Medical Research Fund (and its predecessor funds) administered by the Food and Health Bureau. In this edition, we present 13 dissemination reports of projects related to children's health, neurology, and stroke and brain injury. In particular, three projects are highlighted due to their potentially significant findings, impact on healthcare delivery and practice, and/or contribution to health policy formulation in Hong Kong.

Developmental delay and learning difficulties originate mainly during embryogenesis or early brain development. Its prevalence in Hong Kong is about 1%. Whole-exome sequencing (WES) is a potentially valuable technique for diagnosing previously undiagnosed developmental disorders. Kwok et al<sup>1</sup> aimed to find the causative, small, single-nucleotide or multi-nucleotide mutations fitting monogenic dominant disease models and recessive disease models among 30 patient-parent trios of children with undiagnosed developmental delay. They found that WES is a cost-effective method for management of patients with apparently undiagnosed developmental delay or learning difficulties.

In Hong Kong, about 10% of older persons have dementia. Informal caregivers who provide the bulk of dementia care experience considerable stress. Caregivers are at an elevated risk of developing depression and anxiety and have poorer quality of life and perceived health, higher risk of hypertension, lower immunity, and elevated risk of mortality. Chan et al<sup>2</sup> compared the efficacy of a 12-step sitting Tai Chi home-based structured exercise programme

with a non-exercise social contact control group in the treatment for depression in both carers and care recipients. They found that the exercise programme alleviated mild depressive symptoms among caregivers. Both caregivers and care recipients had improved balance ability. The sitting Tai Chi programme offers a low-cost and safe treatment option for caregivers with mild depressive symptoms.

The incidence of stroke in patients with type 1 diabetes is about four-fold higher than in the general population. These patients tend to die from stroke, with shortened median survival and more haemorrhagic transformation. Lutein is an anti-inflammatory and anti-oxidative agent that has neuroprotective effects in wildtype mice upon middle cerebral artery occlusion. Lai et al<sup>3</sup> aimed to identify the cause of exacerbation of symptoms in patients with diabetes upon stroke using a mouse model of type 1 diabetes and to determine the efficacy of lutein under hyperglycaemic conditions. It was found that lutein treatment was able to lower mortality (after long ischaemia) and neurological deficits (after short ischaemia). Lutein is therefore a potential treatment for stroke patients with type 1 diabetes. Further studies are required before clinical application.

We hope you will enjoy this selection of research dissemination reports. Electronic copies of these dissemination reports and the corresponding full reports can be downloaded individually from the Research Fund Secretariat website (<https://rfs2.fhb.gov.hk/>). Researchers interested in the funds administered by the Food and Health Bureau also may visit the website for detailed information about application procedures.

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## References

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2. Chan WC, Lam LCW, Lautenschlager N, Dow B, Ma SL. Home-based exercise intervention for caregivers of persons with dementia: a randomised controlled trial: abridged secondary publication. *Hong Kong Med J* 2020;26(Suppl 7):S13-6.
3. Lai AKW, Ng DTC, Tam BKC, Fung FKC, Chung SK, Lo ACY. Lutein for alleviating early high mortality and brain pathology after experimental stroke in a genetic type I diabetic mouse model: abridged secondary publication. *Hong Kong Med J* 2020;26(Suppl 7):S37-41.