



## McWhinnie's World

# New Research Offers Hope In Alzheimer Battle

By Jill McWhinnie

Alzheimer's. It was just a word until my 86-year-old Aunt Reta began to display symptoms.

A Bay Street legal secretary now unable to write a cheque for her rent; a woman who white-water rafted the Nahanni River in her 50s, now disoriented a block from her Toronto apartment; a feisty, self-reliant person, now unable to manage basic aspects of independent living.

Over half a million Canadians over the age of 65 have Alzheimer's disease or a related dementia. In *Rising Tide: The Impact of Dementia on Canadian Society*, a report published this year, the Alzheimer Society predicted that within 25 years, 1.1 million Canadians will be living with dementia, with an attendant economic burden of \$153 billion.

"Alzheimer's develops when combined risk factors overwhelm the self-repair and self-healing mechanisms in the brain that normally maintain the nerve cells in a healthy state," said Dr. Jack Diamond, scientific director of the Alzheimer's

Society.

"This leads to pathological changes, of which the most prominent are the loss of nerve cells, the appearance of amyloid plaques and neurofibrillary tangles, and inflammation. The major risk factor is age; however Alzheimer's disease is not a normal part of aging. Other risk factors include genetics, and particularly the presence of the APOE-4 gene, diabetes, head injury, strokes and mini strokes, high cholesterol levels, high blood pressure, lack of regular physical and brain exercise, unhealthy diet, and lack of social interaction."

The degenerative changes in the brain are progressive. "As nerve cells die and disappear, the affected parts of the brain shrink," explained Dr. Diamond. "This process, which first begins in the part of the brain that deals with thinking and memory, eventually affects all parts of the brain, which consequently shrinks as a whole."

The seriousness of my aunt's condition became evident when she was found at the Eaton Centre at closing time by the Toronto police. When I asked her where

she had been, she thought she had been visiting friends, and that the nice young men in uniforms were the sons of her friends.

The cluttered condition of her apartment revealed other aspects of the disease, including an inability to maintain order and resistance to accepting help. My aunt was recently admitted to a long term care facility and appears to have adapted quite well. Established routines, regular meals, interpersonal contact and the enriched environment may slow the advance of the disease, and perhaps even provide some improvement.

"Although there is not yet a cure for Alzheimer's it is possible to slow the progression of the disease, and reduce the risk of developing it," said Dr. Diamond. "About 60 per cent of the overall risk comes entirely from lifestyle and not genetic susceptibility." Research shows that a healthy diet, modest exercise and mental stimulation can reduce the risk of developing dementia. As well, research is under way on new brain imaging techniques which may allow for early

diagnosis, while work is being done on drugs that can increase the ability of threatened nerve cells to stay alive.

Exciting research is also taking place into the promotion of brain repair to restore the damage done by Alzheimer's. "Nerve sprouting from surviving nerve cells is a key feature of repair in the diseased or damaged nervous system," explained Dr. Diamond. "The new sprouts make connections with other surviving nerve cells, compensating for the connections lost when nerve cells died. Nerve sprouting is induced by growth factors, especially one known as BDNF. Research indicates that exercise stimulates production of BDNF. One study has documented that those exercising three times a week were 40 per cent less likely to develop Alzheimer's."

Dr. Diamond also notes that "the more social stimulation, i.e. talking, touch and emotional interaction a person with Alzheimer's receives, the more likely it is that their surviving brain cells will be induced to sprout and restore lost connections."

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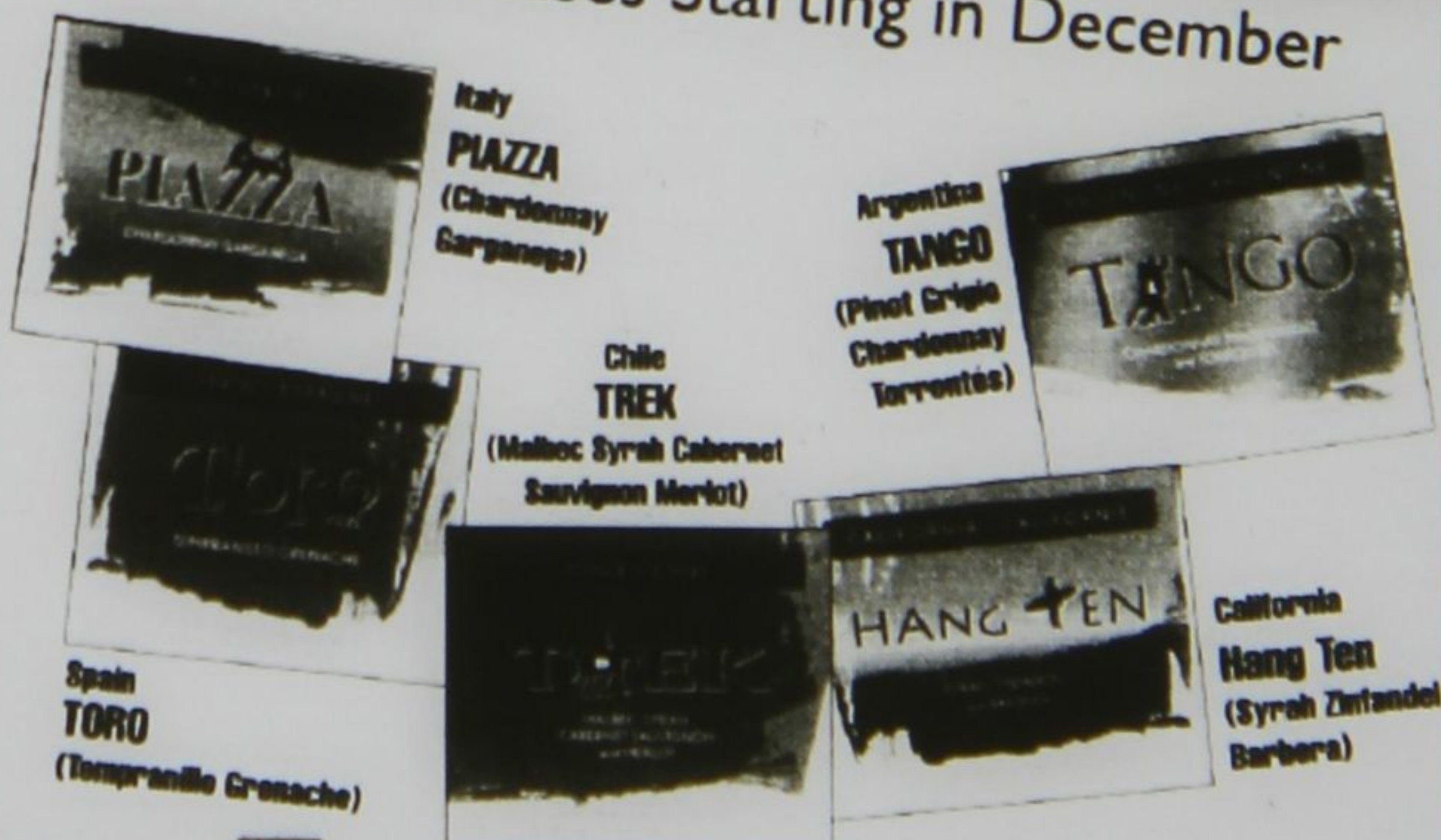
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