



## ACTIVITY AS A TREATMENT FOR COGNITIVE DECLINE

A study presented at the Alzheimer's Association International Conference 2012 suggested that moderate exercise has measureable positive effects in the brain.

The EXCEL (Exercise for Cognition and Everyday Living) study involved 86 women between the ages of 70 and 80 with probable mild cognitive impairment. The participants were randomly assigned to either resistance training, aerobic training or balance and tone (BT) training for 24 weeks.

The resistance training, aimed at improving muscle strength, used free weights and a Keiser Pressurized Air System. This technology uses compressed air for resistance instead of weights. It's easier on the joints and connective tissue, thus it's safer for older adults. The group doing aerobic training to improve cardiovascular health, included walking outdoors, while the BT group's exercise regimen involved stretching, relaxation and a range of motion exercises.

The researchers primarily measured selective attention and conflict resolution (assessed by the Stroop word test). Secondary measures included verbal memory (assessed with Rey's Auditory Verbal Learning Test-RAVLT) and associative memory and functions. Magnetic resonance imagery (MRI) scans assessed functional plasticity (i.e. the ability of the brain's nerve cells to reorganize and compensate for the loss of function).

When the results were analyzed and compared with the BT group, the women in the resistance training group had significantly higher Stroop test scores (17% vs 2.4% improvement respectively). There was no significant difference with aerobic exercise. The resistance and aerobic exercise groups improved their memory scores but on different types of memory. The aerobic exercise group showed significant improvements in balance and cardiovascular capacity. MRI testing "showed increased activation in 3 brain regions during associative memory tests in the resistance training group".

Other recent studies have demonstrated similar results. The findings are important because they offer new treatment options for adults with mild to moderate cognitive decline and may be shown to delay or prevent further cognitive decline if incorporated into the routines of daily living. Resistance training may be suitable for people with mobility issues who are not able to participate in the other forms of exercise but are able to lift some free weights. More studies are needed to determine the different effects of exercise but the general conclusion is that it's never too late to begin exercising to improve cognitive functioning. [MPT](#)

## FENTANYL MAY BE ASSOCIATED WITH SEROTONIN SYNDROME

Although fentanyl is not known to precipitate serotonin syndrome when used alone, Health Canada has warned that it may be associated with this potentially fatal adverse effect when used with other serotonergic drug(s). "Fentanyl belongs to the opioid analgesic class known as phenyl-piperidines (which also includes meperidine, tramadol, methadone and dextromethorphan)". The drugs in this class are considered weak serotonin reuptake inhibitors.

Serotonin syndrome may occur when a drug or several concomitant drugs increase serum serotonin levels. "Successful management of serotonin syndrome requires heightened clinical awareness for prevention, recognition and prompt treatment". Although the syndrome is rare, it can result in death if not treated. The greatest risk is often within 24 hours following initiation of a drug that increases serotonin levels or following an increase in dose.

Signs of serotonin syndrome are: shakiness, twitching or stiff muscles, shivering, agitation or restlessness, confusion, hallucinations, racing heartbeat, very low or very high blood pressure, goosebumps, diarrhea, nausea or vomiting and/or dilated pupils. Emergency treatment should be sought if high fever, profuse sweating, severe muscle spasms or rigidity, seizures, arrhythmias or loss of consciousness occur. [MPT](#)

## Toviaz® (fesoterodine fumarate) 4 mg & 8 mg extended release tablets Pfizer (not currently a benefit of ODB)

Toviaz is classified as an anticholinergic-antispasmodic agent indicated for the treatment of patients with overactive bladder and symptoms of urinary frequency, urgency or urge incontinence or any combination of these symptoms. Toviaz and Detrol® (tolteridone) share the same active metabolite.

### Contraindications, Warnings & Precautions

Toviaz is contraindicated in patients with:

- urinary and/or gastric retention
- uncontrolled narrow-angle glaucoma
- hypersensitivity to Toviaz, Detrol or Detrol LA®, soya, peanuts and/or lactose
- severe hepatic impairment

Administer Toviaz with caution in patients:

- who have a history of ischemic heart disease or tachyarrhythmias
- taking concomitant CYP3A4 inhibitors (*refer to Drug Interactions*)
- with decreased gastrointestinal motility
- with clinically significant bladder obstruction (due to the risk of urinary retention)
- with mild to moderate hepatic and/or renal impairment (Doses > 4 mg daily are not recommended in patients with severe renal impairment- CrCL < 30 mL/min)

**Drug Interactions:** Toviaz is metabolized mainly by CYP2D6 and CYP3A4 to its active metabolite.

- Coadministration with drugs with anticholinergic properties may increase the therapeutic and/or adverse effects.
- Doses of Toviaz exceeding 4 mg daily are not recommended in patients taking potent CYP3A4 inhibitors (e.g. ketoconazole, itraconazole, miconazole, clarithromycin).



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References on Request  
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- Rifampicin and carbamazepine induce CYP3A4 enzymes which may lead to lower plasma levels of the active form of Toviaz. Coadministration is not recommended.

**Adverse Effects:** Most commonly reported effects are dry mouth, constipation, urinary tract infections, dry eyes and dyspepsia. Effects which tend to be more serious include angioedema of the face, lips, tongue and/or larynx, urinary retention, irritable bowel syndrome and QT prolongation.

**Dose, Administration & Storage:** The recommended initial dose is 4 mg by mouth once daily without regard to food. The dose may be increased to 8 mg once daily based upon individual response and tolerability. The tablets should be swallowed whole, not chewed, crushed or divided.

Patients with severe renal impairment (CrCL < 30 mL/min) and people taking potent CYP3A4 inhibitors should not exceed 4 mg of Toviaz daily.

Toviaz extended release tablets are available as 4 mg (light blue and FS engraved) and 8 mg (blue with FT engraved) in bottles of 30 tablets. The tablets should be stored at room temperature (25° C) and protected from moisture. **DN**

## Botox® (botulinum toxin A) Injection Allergan ... *New indication*

Botox is now indicated in adults who are intolerant to or have an inadequate response to anticholinergics, for the treatment of urinary incontinence caused by neurogenic detrusor overactivity that results from neurogenic bladder associated with multiple sclerosis or subcervical spinal cord injury. The recommended dose is 200 units (30 mL) injected into the detrusor muscle via a flexible or rigid cystoscope. The injections are administered in 1 mL doses (totaling 30 mL) spaced 1 cm apart. **DN**

*(Refer to the product monographs for complete information)*

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