

# THE SPECTRUM OF EPILEPSY

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# Co-Morbidities & Epilepsy

The co-morbidities are disorders that go along with epilepsy.

They may be more serious than the seizures themselves.

# Co-Morbidities & Epilepsy

Common co-morbidities include:

- Cognitive
- Psychosocial / Psychiatric
- Behavioural
- Reproductive (adults)
- Sleep

# Co-Morbidities & Epilepsy

All co-morbidities vary from individual to individual.

They will be sometimes present and sometimes absent.



# Epilepsy & Cognitive Impairment

# Epilepsy & Cognitive Impairment

One of the most common complaints in people with intractable epilepsy is a general defect in memory.

The reasons for memory impairment are not completely clear.

In some cases, it may relate to the side-effects of anticonvulsant drugs (next slide).

In others, it may relate to changes in the brain.

# Epilepsy & Cognitive Impairment

Likelihood of anticonvulsant drugs to cause cognitive impairment (“sedative” side-effects)

## More likely

- *Clonazepam (Rivotril)*
- Phenobarbital (Luminal)
- Phenytoin (high doses) (Dilantin)
- Primidone (Mysoline)
- Topiramate (Topamax)

## Less likely

- Carbamazepine (Tegretol)
- Clobazam (Frisium)
- Gabapentin (Neurontin)
- Lamotrigine (Lamictal)
- Valproate (Depakene, Epival)

Effects vary from individual to individual.



# Epilepsy & Psychosocial/ Psychiatric Impairment



# Epilepsy & Psychosocial/ Psychiatric Impairment

Emotional and psychosocial difficulties are disproportionately high in people with epilepsy.

In one large study, about 50% of the children with intractable epilepsy were identified as having serious psychosocial problems

# Epilepsy & Psychosocial/ Psychiatric Impairment

In another study, clear-cut psychiatric disorders were identified in 33% of children with epilepsy, as compared to 7% in the general population and 2% in children with other chronic illnesses.

# Epilepsy & Psychosocial/ Psychiatric Impairment

A recent study on adults with uncontrolled seizures and normal IQs reported that about 30% had psychiatric disorders, including psychosis, antisocial personality disorders, anxiety and depression.

# Epilepsy & Psychosocial/ Psychiatric Impairment

Some of the most psychosocial/psychiatric common problems include anxiety, depression, irritability, aggression, and irrational periods of rage.

In children at risk for suicide, there is a fifteen-fold over-representation of children with epilepsy.

# Epilepsy & Psychosocial/ Psychiatric Impairment

Often there is social isolation and withdrawal.

Adult children may continue  
to live with their parents.

The suicide rate is five times higher than  
in the general adult population.

People with seizures are also  
over-represented in the prison population.



# Epilepsy & ADHD

# Epilepsy & ADHD

In addition to emotional problems, children with uncontrolled seizures may have problems with hyperactivity.

It is estimated that 20-30% of children with epilepsy have concurrent attention deficit/hyperactivity disorder (ADHD).

A still larger number of children with seizures show deficits in attention or in impulse control, without showing the full ADHD syndrome.



# Epilepsy & ADHD

The emotional and behavior problems associated with ADHD may be compounded by the effects of the anticonvulsant drugs.

The “paradoxical irritability” caused by anticonvulsants is probably an exacerbation of tendencies towards AD/HD.





# Epilepsy & Reproductive Problems

# Epilepsy & Reproductive Problems

Reproductive and hormonal disorders are common in both men and women with intractable epilepsy.

This is particularly true if the epilepsy is of temporal-lobe origin.

# Epilepsy & Reproductive Problems

In women, menstrual disorders are seen, such as irregular or missed menstrual cycles, or cycles in which there is no ovulation.

Fertility is reduced to 70-80% of normal.

Hormonal disorders include hypogonadism (with too little estrogen) and polycystic ovaries (with too much estrogen).

Anticonvulsant drugs, and particularly valproate, may contribute to these disorders.

# Epilepsy & Reproductive Problems

In men with intractable epilepsy, there is an increased risk of erectile dysfunction.

Over 90% of men with epilepsy have abnormal semen analyses, including decreased sperm count and impaired sperm motility.

In both sexes, diminished sexual desire and responsiveness have been described.



# Intractable Epilepsy & Sleep

# Intractable Epilepsy & Sleep

People with uncontrolled seizures often experience sleep disturbances.

These are believed to be caused both by their seizures and by some of the anticonvulsant drugs.

This disturbed sleep sometimes leads to daytime drowsiness and poor cognitive performance.

In particular, sleep apnea is over-represented in people with epilepsy.

# Co-Morbidities & You

Both in children and adults,  
the co-morbidities are responsive to therapy.

Unfortunately, these psychiatric problems are  
seldom diagnosed or treated.

Therapy focuses on seizure control and  
other problems are neglected.

People with seizures should demand treatment  
for the accompanying co-morbidities.



# Co-Morbidities & Epilepsy Ontario

The following Draft Strategy has been prepared by a committee of Epilepsy Ontario, following consultation with clinicians and with clients (via an on-line questionnaire).



# Co-Morbidities & Epilepsy Ontario

- 1.) A public awareness campaign will be launched to educate people about epilepsy, and about the new opportunities for epilepsy care. Lay organizations and regional centers should play a major role in the public awareness campaign.

# Co-Morbidities & Epilepsy Ontario

- 2.) Eventually, four large regional epilepsy centres will be established: Toronto, London, Ottawa, and Sudbury. Catchment areas for each Centre will be established. The first Centre to be established will be Toronto, where there is already a critical mass of clinicians and associates. Other Centres will be established subsequently, one at a time. (Until the establishment of the Sudbury Centre, outreach to the North will have to be done electronically.)

# Co-Morbidities & Epilepsy Ontario

- 3.) Comprehensive Programs will be established at all of the regional centers. Comprehensive teams will involve neurologists, neurosurgeons, psychologists, psychiatrists, specialists in ADHD and sleep disorders, physiotherapists, specialists in reproductive disorders, plus, of course, social workers and nurses. Each program will be run by a senior epileptologist plus a nurse practitioner.

# Co-Morbidities & Epilepsy Ontario

- 4.) At the Comprehensive Programs, therapy will be available for the families as well as the patients.
- 5.) Transportation will be arranged to and from the regional centers. This should include transportation for people from the north of Ontario. Funds will be provided for this.

# Co-Morbidities & Epilepsy Ontario

- 6.) Lay organizations - with support groups – will be invited into the regional centers, and will follow the patients after their return to their homes. Funds will be provided to assure that the lay organizations can fulfill this function.
- 7.) Regional centers will have training programs for new epileptologists, nursing practitioners, etc.

# Co-Morbidities & Epilepsy Ontario

- 8.) There will be a research program associated with each regional center - with support for technological transfer.
- 9.) There will be outreach from the regional centers, so that workers from the centers (in conjunction with lay organizations) can provide support and advocacy for patients after their return home.





End

Questions or Comments?