



Gambling, Sex, and...Parkinson's Disease?

That's right. Add impulse-control disorders such as pathological gambling and hypersexuality to the list of possible non-motor problems that can occur in individuals with Parkinson's disease (PD). Recent studies suggest that seriously disabling impulsive behaviors occur in three to five percent of PD patients, affecting individuals at all stages of the disease. The exact prevalence of such disturbances in PD is not entirely clear since the behaviors are often performed in secret, or because the association with PD seems improbable and is therefore never reported at doctor visits. But as it becomes increasingly clear that

some anti-parkinsonian drugs play a role in the development of impulse-control disorders, it is critical that clinicians screen for this possibility and that patients and families report any concerns or changes in behavior to the treating physician immediately. Early recognition and treatment of impulsive behaviors can open paths to their resolution or control, thereby avoiding their devastating consequences.

General features of impulse-control disorders in PD

Impulse-control disorders are characterized by an inability to resist an impulse, drive or temptation that is harmful to the individual or to others. The behaviors are often motivated by the prospect of pleasure or gratification and, in people with Parkinson's, most typically involve sex, gambling and abuse of anti-parkinsonian medications. Pathological shopping, pathological eating and other behaviors may also occur. In almost all cases, the impulsive behaviors that accompany Parkinson's or its medications are at odds with the person's pre-Parkinson's personality. The problem tends to be most serious among people whose

Parkinson's disease is more advanced, and who take high doses of anti-parkinsonian medications to maintain motor function. Recent reports suggest that it may also be intensified through use of dopamine agonists, but the behaviors can develop in the context of any anti-parkinsonian medication — or after neurosurgical treatments such as deep brain stimulation.

In PD, dopaminergic medications replace the loss of dopamine that result from degeneration of the substantia nigra, the "black substance" region of the brain that controls most of our ability to move. However, this is not the only dopamine-producing neural system that is affected by the disease and by dopaminergic medications. Impulse-control disorders are thought to be related to abnormalities in the brain's "reward circuit," which is also a dopamine-mediated neural system, and sensitive to dopaminergic medications.

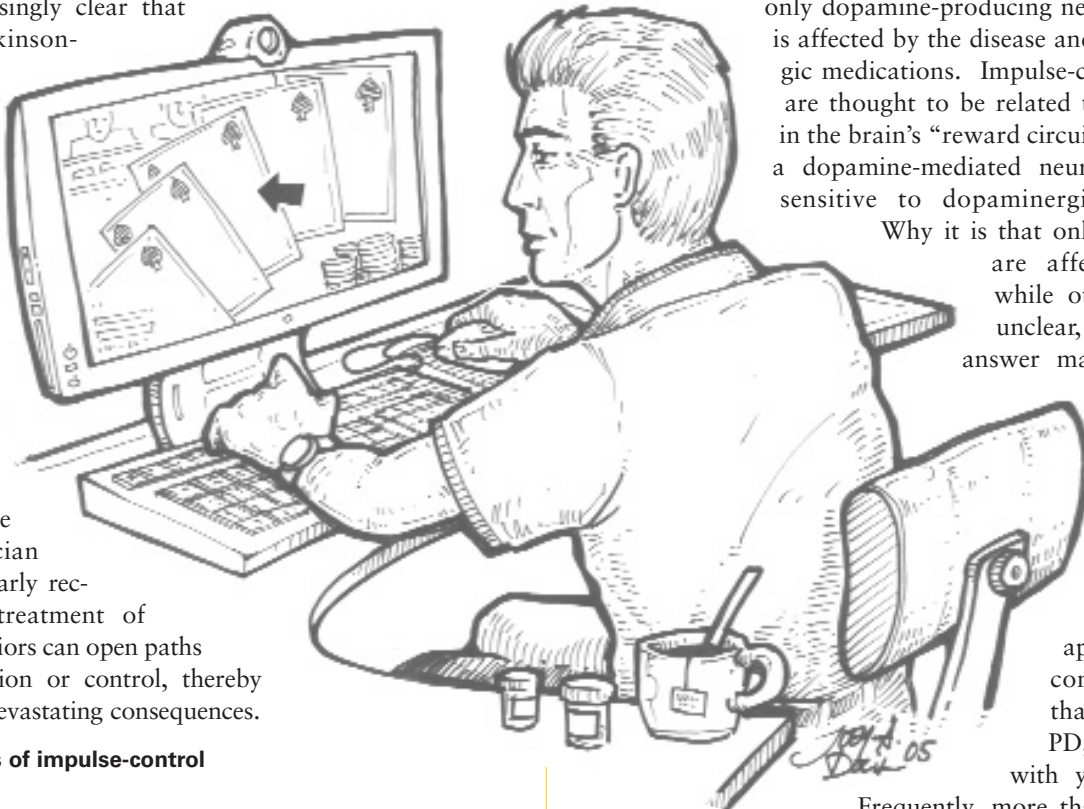
Why it is that only some patients are affected this way while others are not is unclear, but one possible answer may be found in genetic differences in the dopamine system.

As in the general population, problem behaviors appear to be more common in men than women with PD, and in patients with young-onset PD.

Frequently, more than one impulse-control disorder is present, sometimes accompanied by psychotic symptoms (that is, hallucinations or delusions) or a mood disorder (depression or anxiety). Impulsive behaviors in people with Parkinson's can also be a feature of hypomanic or manic disturbances, which are typically characterized by persistently elevated, expansive, grandiose or irritable mood states.

Pathological gambling

Pathological gambling refers to recurrent, maladaptive gambling behaviors, including a progressive inability to resist the



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impulse to gamble despite its destructive consequences. Pathological gamblers tend to report experience with many types of gambling (for example, casinos, lotteries, Internet/television-based games and raffles), as well as losses that can range from several hundred to many thousands of dollars. The gambling persists despite pleas from others, as does the decimation of bank accounts and the destruction of careers and families. Sometimes, the drive to gamble is so intense that individuals deceive others or even steal to satisfy their urge. Sleeplessness, mood swings, irritability and tension are often only relieved by gambling. For pathological gamblers in general, there is a high risk of suicide, but it is not known whether this association is true for people with PD.

Hypersexuality

Unlike a resting tremor (a clear sign of dysfunction in the nervous system), sex, gambling and shopping are common actions in everyday life. Thus, problematic behaviors may not be instantly viewed as abnormal, even when they begin to present a deviation from the person's usual character. Hypersexual behaviors range from intrusive sexual thoughts, urges or remarks, to overt, inappropriate and often offensive sexual behaviors. Not surprisingly, the scale of such aberrant behaviors will vary from person to person. There may be increased demands for sexual activity in an established context or attempts at indiscriminate sexual activity in random contexts. Some patients continually make inappropriate remarks in public while others — in a departure from previous behaviors — may begin to use pornography, patronize prostitutes, engage in Internet-based sexual activity or develop paraphilias (intense, sexually arousing fantasies, urges or behaviors such as exhibitionism, cross-dressing or sado-masochism). These forms of hypersexuality may be accompanied by such disruptive experiences as irritability, anger, mood instability and disturbed sleep.

Abuse of anti-parkinsonian medications

Abuse of anti-parkinsonian medications is another impulse-control disorder that can occur in people with PD. It consists of a pattern of inappropriate and excessive use of anti-parkinsonian med-

ications along with drug-seeking behaviors, tolerance and psychological dependence. Even early in the course of their Parkinson's, affected patients will insist upon increases in dopaminergic medications to treat "unbearable" motor symptoms as well as psychological feelings. Increasingly, patients have a distorted view of "on-off" motor and mental states — that is, they describe an intense "high" and increased energy or well-being in the "on" state and irritability, anxiety, or even despair or suicidality in the "off" state. Often, these patients report a history of a mood disorder before the onset of PD and its treatment.

Treatment

Although the treatment of impulse-control disorders symptoms in Parkinson's disease has not been formally studied, it is generally recognized that these problems are challenging to manage. One reason for this is simply that as patients require higher doses of anti-parkinsonian medicines in order to control motor symptoms, these higher doses may themselves contribute to the deviant behaviors. These deviant or self-destructive behaviors may have a huge impact on a person's family and friends. Sometimes, the impulsive behavior damages relationships and erodes the support network that is so important for the person's care.

In many cases, the onset of impulsive behaviors is associated with a recent addition or increase in a dopaminergic medication. In such cases, when a patient displays behaviors that are uncontrolled and impulsive, the first step should be to immediately inform the prescribing doctor, who will need to adjust the anti-parkinsonian regimen. Reducing the dose or eliminating the new medicine is often sufficient. Some patients tolerate one form of a dopamine agonist but not another, while others can tolerate only levodopa therapy. In some cases, an antipsychotic such as quetiapine (Seroquel®) may need to be added to further control symptoms, especially if there is associated paranoia or hallucinations. This medication can often improve sleep, thereby limiting the time available for a person to engage in undesired nocturnal behaviors. Other classes of medication, including tricyclic antidepressants, sero-

tonin reuptake inhibitors (Prozac®, Zoloft®, Paxil®, Lexapro® and others) and mood stabilizing agents have been used to treat impulsive behaviors in non-PD patients with variable success, especially if there is a coexisting mood disorder.

Behavioral measures are also an integral aspect of treatment. Especially for gamblers, opportunities to carry out the behavior should be eliminated or at least restricted until there is adequate improvement. For families, this may mean taking away credit and bank cards, limiting cash on hand, restricting access to bank accounts that enable withdrawals and limiting Internet access. Because of the potential problems of noncompliance and abuse of medicines, some patients may need psychiatric evaluation or even inpatient psychiatric hospitalization. Some patients benefit from 12-step programs for addicts or gamblers, but these must be accompanied by other methods, including adjustments in anti-parkinsonian medications. It is also important to focus on the role of dopaminergic therapies in these behaviors and how to control the behaviors — and not on suspicions about "weakness of character."

The most important rule for a patient or caregiver who is dealing with an impulsive behavior: be sure to relay your concerns to your physician. Whether the behavior stems from Parkinson's or not, it is a legitimate concern and should be discussed. In some cases, the expertise of a psychiatrist may be needed.

To read more about PD and non-motor symptoms, look for Dr. Marsh's forthcoming book (co-edited with Dr. Matthew Menza), *Psychiatric Issues in Parkinson's Disease — A Practical Guide*, scheduled for publication in fall 2005.

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