Tourette Syndrome and 
Repeated Anger Generated Episodes

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“I am 21 years old. I have TS + OCD + ADD + Panic Attacks + Depression, and yes... I have what I, personally, identify best as ‘rage.’ It doesn’t matter to me if rage is officially accepted as part and parcel of TS or not, nor do I care what others name it. However, as part of my own neurological picture, I have attacks of rage—not anger. I have that too, but it is different from the unreasonable sudden outbursts. I know this from deep within; I have always known this. However, I have not always understood it. Finding out that, for me, rage is a part of my overall symptoms was a great relief after the years I spent agonizing over my ‘evilness.’ I was not ‘born bad,’ I am neither aggressive nor dangerous. Getting past the ‘why’ of my rage, allowed me to concentrate on the ‘hows’ of controlling it. Learning the reason was the gift that prompted me to deal with it.”
— Jason Valencia

Introduction
One of the most distressing symptoms experienced by a small number of individuals with Tourette Syndrome (TS) is explosive outbursts of rage. Typically, these episodes are abrupt, occur with little or no apparent provocation and involve feelings of uncontrollable anger. Among many members of the Tourette Syndrome Association (TSA), these symptoms have come to be called “rage attacks.”

This brochure will review some information about explosive anger obtained from a TSA-funded study which was designed to look more scientifically at this disturbing and baffling behavior. The following were the primary aims of the study:
1) to define rage attacks;
2) to determine how they may be related to TS;
3) to delineate which features may be shared by those who experience them; and
4) to determine how these episodes differ from other expressions of anger.

We believe that a better understanding of these symptoms will contribute to a more meaningful treatment, and will provide some measure of relief—both for the people who experience this behavior as well as for those who live with, love and care for them.

Definition
In this brochure, rage attacks are defined as distinct episodes of intense anger or rage which are described by those who have them as uncontrollable, unwanted and distressing. They are not typical of the person’s usual personality, nor are they related to other known causes of such behavior, e.g., brain injury, seizure disorder, or chronic psychiatric or sociopathic conditions.

1) During an episode, a person feels unable to resist or control his/her anger. These outbursts continue to be a source of great distress and embarrassment. Younger children have little or no control over these behaviors. Verbal attacks, physical assaults and even injury and damage to property may result.

2) The degree of anger and aggression expressed is grossly out of proportion to the provocation. In other words, the aggressive behavior seems highly inappropriate to the actual trigger. In some individuals,
a seemingly trivial frustration may lead to an overwhelming expression of anger. For example, a child may ask a question, and, for no clear reason, react explosively when an immediate response does not match the answer he or she had expected.

3) The onset of the attack is sudden and often unpredictably triggered. Some people describe a sense of intense inner tension just prior to the explosive outburst (perhaps of only a few seconds in duration) followed by a feeling of physical relief when it is over. Afterwards, the individual often expresses remorse and acknowledges that the behavior was irrational.

4) The outbursts are not typical of the person’s usual personality. Often these individuals are described as caring and loving. Characteristically, strong feelings of regret, humiliation, helplessness and bewilderment follow an episode. This is one reason why some describe them as “spells,” “attacks,” or “fits.” Even physicians may mistakenly consider the possibility of epileptic seizures in such patients.

**Maybe It’s Just a Temper Tantrum**

**Are these merely tantrums? Is this a spoiled child? An adult with a short fuse?**

How do we distinguish between the familiar behavior we call a “temper tantrum” and the outbursts that are the subject of this brochure—eruptions of furious, uncontrollable anger?

Let us begin with some examples:

1) Ten year old Brian has symptoms of TS, obsessive-compulsive disorder (OCD) and attention-deficit disorder with hyperactivity (ADHD). After a pleasant outing with his mother, she agrees to buy him a Coke. But the store has only Coke in bottles and Brian insists his must be in a can. He explodes with rage, filling the store with ear splitting screams, frenzied kicking and flailing. He begins to knock things off the shelves, and must be dragged forcibly from the premises. When his fury subsides, Brian sheds tears of intense remorse, shame and guilt. He believes that he is a “bad person.”

2) Jennifer is 17 years old. She too has TS, OCD and ADHD. When her parents tell her that she must clean her room before she can go out with a friend, she punches holes in her bedroom wall, smashes her new TV set, screams obscenities and threatens her parents with violence. Afterwards, she apologizes profusely saying that she felt overwhelmingly “out of control” and completely unable to stop herself. She fully realizes that her parents’ request was reasonable and that her response was unreasonable. Although such outbursts are not new to her, she is ashamed of herself, and often prays that she will learn how to be in control.

3) Mark is a 34-year old man, a devoted husband and father of two small children. He is a responsible adult who struggles every day with symptoms of TS, OCD and ADHD. While he and his family are alone in a doctor’s waiting room, he realizes that his small daughter needs to have her diaper changed and when his wife does not perform this chore immediately, he throws himself prone on the floor, kicks, utters muffled screams and throws sofa cushions. He is acutely embarrassed when the doctor appears, but later he and his wife say, “Now you understand what we have been trying to tell you about the rages.”

Temper tantrums are common in young children who have not yet developed the ability to inhibit socially unacceptable behaviors. They are a classic behavior of toddlers—indeed, we all are familiar with the “terrible two’s.” While such angry outbursts are regarded as normal throughout the early childhood years, it is expected that as children mature, they will develop more acceptable and sophisticated ways to manage their impulses and tolerate frustration. Anger outbursts or rage attacks are different from childhood temper tantrums in that they are not age appropriate. They are not expected to occur in older children, adolescents and adults—at ages when such symptoms are no longer regarded as developmentally appropriate.

It is true that many people, even loving, gentle ones, may on occasion have “bad tempers,” may overreact and can be described as having “a short fuse.” Their unpleasant behaviors are sometimes called tantrums with the implication that these people are acting childishly. Although we all know people who sometimes lose their tempers, in most cases, the overreaction is fleeting in duration and not associated with destruction of property or physical threat. At the very least, these displays of temper can be interrupted or reduced. For example, a typical adolescent may slam his bedroom door, or throw his books on the floor after an argument with a parent. A mother may shout at her children, and throw a beloved toy into the garbage. But the magnitude of the angry response is far less than that observed in rage attacks.

In contrast, the episodes we are discussing appear to run a course that rarely can be interrupted or inhibited. Family members say such things as: “He gets an expression in his eyes like a wild animal, and then I know there is nothing I can do to stop him.” “He is like
Dr. Jekyll and Mr. Hyde, as if he has two personalities,” or “We know it sounds absurd, but she truly seems as if she is possessed.”

Extreme attacks of anger should also be distinguished clearly from what is called “predatory aggression.” This term refers to people who are psychopathic or antisocial; persons who derive pleasure from inflicting pain and suffering on others. In contrast, people with rage attacks are not regarded by peers or family members as being cruel or indifferent to the feelings of others. Whereas those with antisocial traits usually feel little or no remorse following an aggressive outburst, children and adults with rage attacks often express profound remorse and self-loathing.

Because few people understand the real nature of these outbursts, parents are subjected to much criticism of their parenting skills. Members of the extended family, friends and even strangers who observe an outburst will often advise more discipline—e.g.: “If he were my child, you can be sure he wouldn’t get away with that more than once,” or “If you were stricter, she wouldn’t behave that way.” It is only with greater familiarity with the child that others may learn to recognize the unusual and extreme intensity of these episodes as being quite different from the person’s usual behavior. Sadly, those who have these attacks will sometimes describe another personality that seems to take over during an episode. In fact, often they themselves are more frightened of their own behavior than anyone else.

**Time Course**

Most ordinary arguments or encounters that result in an angry response are characterized by a period of escalation which precedes the actual outbursts. During this period of crescendo build-up, a series of de-escalating exchanges may occur, e.g. by physically walking away from the scene thereby avoiding an outburst. In cases of explosive rage, there is little or no period of escalation, but rather we see a nearly instantaneous reaction with little or no time for de-escalation.

**Frequency**

Episodes may occur several times a day, several times a week or less often. The frequency appears to fluctuate, to wax and wane, much in the same way (though not necessarily at the same time) as tics and OC symptoms.

Outbursts are more likely to occur at home and with family members rather than in other social situations suggesting that they can be, at least partially, controlled. However, they may happen anywhere. Often a particular family member, most frequently the child’s mother or a person’s spouse, may become the target of these attacks. Also, these episodes may be more apt to erupt when a person is tired or physically debilitated by illness.

**Who Is Most Likely To Experience Such Attacks?**

Explosive outbursts are known to occur in people who have a variety of neurological conditions such as head trauma, Alzheimer’s disease and stroke. Similar symptoms have also been described in a number of psychiatric disorders including depression. The data from our recent study indicate that rage attacks are not related to having TS with tics alone, even when motor and/or vocal tics are very severe. None of the people with rage attacks that we have studied had TS with tics alone. Even though both the motor and vocal tics of TS and these outbursts seem to be involuntary, our study suggests that episodes of rage are not tics, and therefore the term “rage tic” is misleading.

However, our study did suggest that children and adults whose TS is accompanied by the symptoms of other disorders, such as ADHD, OCD and mood disorders* are the ones who were at greatest risk for having these explosive outbursts of anger. Our research data showed that the greater the frequency and severity of these co-occurring disorders, the greater the likelihood for experiencing extreme anger attacks. When such associated disorders are identified and properly treated, the chances of reducing the intensity and frequency of these outbursts are much improved.

**Do We Know The Cause?**

There is a growing awareness in the medical community that aggressive impulses are caused and modulated by brain chemistry. Specific areas of the brain are involved in different types of aggression. There is much evidence from biological studies that the type of aggression seen in predators, such as rapists or murderers, is quite distinct and different in terms of the brain’s activity from that of the explosive episodes we are describing. Why associated conditions such as ADHD, OCD, etc. predispose a minority of people with TS to having these outbursts is still poorly understood. We strongly suspect, however, that neurotransmitters including serotonin, *including depression and bipolar disorder, i.e., “feeling low” or “high”*
norepinephrine and dopamine are all involved in the expression of aggression. These same neurotransmitters also play important roles in causing the symptoms of TS, OCD, ADHD and other mood disorders.

**Inhibition and Maturation**

TS has long been understood to be a disorder of inhibition. That is to say, people with TS do not have the ability to consistently inhibit or regulate motor impulses that emerge from deep parts of the brain. Tics can be explained as impulses that most people can automatically and unconsciously inhibit most of the time. Transient tics are a common childhood occurrence, and are most likely the result of an immature, but still developing, nervous system. Obsessions and compulsions can also be thought of as impulses that are largely screened out or inhibited by people who do not have OCD. Almost everybody at one time or another has experienced some obsessions and/or compulsions, but not to the degree that would impair their functioning. In fact, obsessions and compulsions might be viewed as a part of normal developmental behavior in young children. For example, many young children insist on going through a specific night time ritual or the daily company of a particular toy or “security blanket.”

As we mature, usually our ability to deal with frustration and regulate our moods improves. As with transient tics, typically such behaviors subside with normal maturation. The ability to delay gratification and regulate impulses increases with our development from infancy to adulthood. Easily distracted infants become increasingly focused as they mature. Therefore, it seems understandable that people who have ADHD and/or OCD in addition to the symptoms of TS may be at greater risk for having trouble controlling impulsive anger. One can also imagine how the impatience associated with ADHD, when combined with the rigidity and need for perfection of OCD, can cause some to be much less able to regulate their anger.

**How Does It Feel?**

In addition to the disruption, destruction and harm people may pose to themselves and others when these outbursts occur, those who experience these symptoms are usually terrified by their own loss of self control. Often they feel humiliated, guilt ridden, friendless and unloved—even evil. Self-esteem plummets. Children may frequently lose confidence in social situations, and are seriously hampered in relations with their peers. The reaction of the adults in these children's lives is almost always one of disapproval. Youngsters feel un-protected, living in an unfriendly, unpredictable and threatening world. Depression is a common response, and some children may even express the wish to die. They feel they are “no good,” and that no one wants them around. Unfortunately, these negative views of themselves are all too often reinforced by those around them because the extreme behavior causes feelings of anger, frustration, helplessness and hopelessness in others. When the episodes occur in school they are rarely accepted with tolerance and understanding. Realistically, a school cannot be expected to take the risk of disruption to other students, and sometimes transfer to a special school may be required. Similarly, anger outbursts at work often result in dismissal from the job. It should be emphasized that not one of the patients we have seen has ever said that they derive any benefits from having these episodes. Instead, what we hear is how much they wish the symptoms would go away.

**How About The Family?**

Living with a family member whose behavior is always threatening to spiral out of control makes everyone feel vulnerable, tense and uncertain. The stress imposed on parents, siblings, spouses and others can be very destructive. Parents may become split off from each other, and find themselves arguing about discipline issues. At best, they feel as if they are “walking on egg shells” because they know that the most pleasant of days can suddenly turn into one of havoc and misery. Any morning of sunshine can suddenly be eclipsed by an afternoon hurricane. Indeed, the “weather” at home can become very unpredictable.

As bad as the rages may be in younger children, they can become worse when the child grows older and bigger and can pose a more realistic physical threat. An adolescent wielding a heavy object presents a serious danger, even if one believes he/she will not actually use it. Other people are, understandably, less tolerant of a raging teenager than a raging five year old. Possessions may be destroyed, walls and windows may be broken, people may be injured. Frightening as this may seem, it has been our experience that serious physical harm is rarely inflicted on others. If an injury does occur, it is usually self-inflicted or accidental.

It is a rare parent who hasn’t lost his/her temper when faced with a raging child. Most come to understand that, in these cases, the child is truly out of control. Realizing how painful it is for the child helps many parents get through their day. Often parents feel like failures and berate themselves. Nevertheless, we as doctors who see many such families are often in awe of their patience and fortitude. The difficulties of raising a
child with TS can be challenging; the problems of raising a child with TS, plus associated disorders and explosive anger can be truly overwhelming at times.

**Treatment & Management — What Can Be Done?**

Many adults have found ways to head off or reduce the frequency of their outbursts. Strenuous exercise (riding an exercise bicycle vigorously, using a punching bag) or going outside where one can shout freely—all may help. However, these techniques do not always work. Even the most loving spouse can reach a point of no more tolerance. Jobs can be lost causing financial stress, poor self-esteem may lead to drug or excessive alcohol use and divorces are not uncommon.

It is our hope that a better understanding of the nature, causes and available treatments for these explosive anger attacks will help all those who are involved, directly or indirectly, with this distressing problem.

**Immediate Intervention**

There is not much that can be done to immediately stop an outburst. Once begun, most episodes seem to run a course, and when in progress, there is no reliable way to reason with, threaten or otherwise exert influence over the person. Some parents find that holding small children and hugging them until they “come through” the attack seems to work. In general, however, trying to hold down persons with TS only makes them feel more frantic and worsens the situation. If there is an immediate danger (destruction of property/danger to self or others), and it seems necessary to remove the person, it is best to choose a place where the individual has privacy and room to move about. In extreme cases, padding can be put in a bathroom or other area so that the person undergoing the episode has a safe private place to explode. It is unwise to follow after the individual as this too can worsen the episode. As difficult as it may sound, it is usually best to simply allow the incident to pass.

Calling the police is unlikely to be helpful, although in rare situations, this may become necessary. Usually the outburst has passed before the authorities arrive, and other than intimidation and pure force, the officers have no better means of controlling the attack. While we may think that the threat of police intervention will prevent another episode from occurring, it has been our experience that this is not so. In the short run, taking the person to a hospital emergency room is equally ineffective. As difficult as it can be in the middle of an attack, it is important to remember that the person experiencing these symptoms is suffering and does not want or choose to have this distressing symptom.

**Long Term Treatment**

It has been our experience that medication is fundamental to the treatment of these outbursts. Unfortunately, until we have a better understanding of the neurophysiology involved, no specific prescription is suited to everyone. As with all medications used for TS, patients need to work closely with their physicians, through a trial and error process, to find the best medicine and dosage for each individual. Identifying and treating co-occurring conditions such as mood disorders, ADHD and OCD is critical in managing the behavior.

We have had some success with medications used to treat depression and OCD such as Anafranil (clomipramine), Prozac (fluoxetine), Zoloft (sertraline), Luvox (fluvoxamine), and Paxil (paroxetine). Of these, our experiences with Paxil seem to be most positive.* We have also found that a newer neuroleptic, Risperdal (risperidone) can be effective. Mood stabilizing drugs such as Lithium, Depakote (valproate) and Tegretol (carbamazepine) are useful in some cases. In others, treating ADHD symptoms with Ritalin (methylphenidate) or similar stimulant medications may sometimes be helpful, although stimulants can worsen agitation in some cases. If tics are exacerbated by stimulant medications, Catapres (clonidine) and Tenex (guanfacine) should be considered.

Since patients with rage attacks characteristically have symptoms of more than one disorder, more often than not, it is necessary to take two or more medications. We recognize that the trial and error process can be frustrating and discouraging, but we encourage patients to persevere. In most cases the frequency and duration of attacks can be reduced considerably. Certain types of behavior therapy may be beneficial. When all else fails, hospitalization may be the only answer. Giving the family a break and a chance to regroup can be helpful, and the value of this option should not be

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*Warning: In June, 2003 the FDA was reviewing case reports of possible increased risk of suicidal ideation and attempted suicides among children and adolescents under 18 years old. These youngsters were treated for major depression with Paxil (paroxetine). At this point in time, the FDA is recommending that this medication not be used for treating major depression in this young population. Considering these safety concerns, it is essential that those who are taking this drug should not discontinue use suddenly, and any changes in drug regimen must be made under medical supervision.*
underestimated. Likewise, respite care should be considered to reduce burn-out. Unfortunately, there are few hospitals that have expertise in the treatment of TS and these episodic rages. Thus, symptoms can easily be misunderstood and, treatment may be inappropriate. The often expressed hope that “he/she can be observed” and then treated appropriately is sometimes unrealistic.

In Summary
Episodic attacks of extreme anger are a very real problem encountered in some children and adults with TS. We believe that these symptoms are closely linked to having additional associated disorders which need to be evaluated and treated. As we learn more about this distressing problem, improved and more specific interventions may soon become available.

A STATEMENT FROM TSA
The phenomenon of uncontrollable anger described herein occurs among a few people with Tourette Syndrome. This publication was developed in response to our obligation to serve those families from among our membership who are grappling with this problem. Rage is a poorly understood behavior that may or may not be associated with the neurologically-based root causes of Tourette Syndrome. Whether there is an association of this behavior with several other neurobiological conditions is unknown as well. Much more research needs to be carried out to determine whether there is a causal relationship among these disorders and this specific behavior.

The Tourette Syndrome Association endorses the view that, as with all members of society, people with TS bear full personal responsibility for their actions. It follows therefore that having episodes of uncontrollable rage cannot be construed as a valid reason for committing a serious anti-social or criminal act.

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This publication is intended to provide information about Tourette Syndrome, its management and the medications currently in use. Families should be advised to first consult a physician concerning all treatments and medications.
ADDITIONAL TSA RESOURCES

Videos & Vignettes

AV-9  After the Diagnosis . . . The Next Steps
Produced expressly for individuals and families who have received a new diagnosis of TS. This video was developed to help clarify what TS is, to offer encouragement, and to dispel misperceptions about having TS. Features several families in excerpts from the Family Life With TS A Six-Part Series who recount their own experiences as well as comments from medical experts. Narrated by Academy Award Winner Richard Dreyfuss. 35 min.

AV-10  The Complexities of TS Treatment: A Physicians’ Roundtable
Three internationally recognized TS experts, Drs. Cathy Budman, Joseph Jankovic and John Walkup provide colleagues with valuable information about the complexities of treating and advising families with TS. Emphasis is on different clinical approaches to patients with a broad range of symptom severity. Co-morbid and associated conditions are covered. 15 min.

AV-10a  Clinical Counseling: Towards an Understanding of Tourette Syndrome
Targeted to counselors, social workers, educators, psychologists and families, this video features expert physicians, allied professionals and several families summarizing key issues that can arise when counseling families with TS. Includes valuable insights from the vantage point of those who have TS and those who seek to help them. 15 min.

AV-11  Family Life With Tourette Syndrome . . . Personal Stories . . .
A Six-Part Series
Adults, teenagers, children, and their families . . . all affected by Tourette Syndrome describe lives filled with triumphs and setbacks . . . struggle and growth. Informative and inspirational, these stories present universal issues and resonate with a sense of hope, possibility, and love. 58 min.

An up-to-date Catalog of Publications and Videos can be obtained by contacting:

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