



# DYSFLUENCY AND PHONIC TICS IN TOURETTE SYNDROME: A CASE REPORT

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Tourette syndrome, a condition first recognized in 1825, is characterized by the presence of multiple motor tics and one or more phonic tics. Individuals with Tourette syndrome may also demonstrate fluency failures in their speech. This study investigated the disfluencies and phonic tics in an 18-year-old affected male before and after a three week period of speech therapy. It was found that the speech pattern displayed by this subject did not completely conform to the classic pattern of stuttering but did bear more resemblance to cluttering. A limited number of therapy sessions resulted in a significant improvement of speech. © 2000 by Elsevier Science Inc.

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*Educational Objectives:* The reader will learn (1) about the tics and disfluency types that might be present in people with Tourette syndrome; and (2) that the fluency failures associated with this syndrome are not characteristic of stuttering.

**KEY WORDS:** Tourette syndrome; Stuttering; Cluttering; Disfluency, Tics

## INTRODUCTION

Tourette syndrome (TS) is a condition that was first described in 1825 by the French physician J.M. Itard (Itard, 1825), who reported on the presence of tics, barking sounds, and uncontrollable utterances of obscenities in a French noblewoman, Marquise de Dampierre. A more detailed description of eight additional cases was published in 1885 by another French physician, George Gilles de la Tourette (Gilles de la Tourette, 1885), after whom the disorder was named.

According to the DSM-IV (American Psychiatric Association, 1994), the essential feature of TS is the presence of multiple motor tics and one or more vocal tics that occur many times a day, recurrently throughout a period of

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more than one year, and cause marked distress or significant impairment in social, occupational, or other important areas of functioning. TS has its onset before the age of 18 years, and is not due to the direct physiological effects of a substance or a general medical condition.

Two studies conducted in the 1980s (Kurlan, Behr, Medved, Shoulson, Pauls, & Kidd, 1987; Rassin Cohn, Shames, McWilliams, & Ferketic, 1983) estimated the prevalence of TS to be between a low of .01% and a high of 1.6%. The percentage prevalence at the high end of this range was, however, not confirmed by more current studies that report a prevalence ranging from .03% to 1% (Cardoso, Veado, & Teotino de Oliveira, 1996; Van de Wetering, Cath, & Buitelaar, 1996; Woods & Miltenberger, 1995). It is generally agreed that TS is three to four times more likely among males than females (Breakfield & Bressman, 1987; Cardoso, Veado, & Teotino de Oliveira, 1996; Colligan, 1989; Rassin Cohn, Shames, McWilliams, & Ferketic, 1983; Singer & Walkup, 1991).

Research relative to the etiology and pathogenesis of TS has made it clear that in most cases the disorder is genetically determined (Duffy, 1995). Most likely there is an autosomal dominant inheritance with sex-specific penetrance and variable expression (Pauls & Leckman, 1986; Van de Wetering & Pauls, 1996). It has been suggested that TS is caused by a dysfunction of central neurotransmitter systems. Dopaminergic, serotonergic, noradrenergic, cholinergic, GABAergic, as well as opioid systems have been found to show abnormalities in individuals with TS (Kurlan, Behr, Medved, Shoulson, Pauls, Kidd, & Kidd, 1986; Malison, McDougle, Van Dyck, Scahill, Baldwin, Seibyl, Price, Leckman, & Inai, 1995; Singer, 1992; Singer & Walkup, 1991). The exact neuroanatomic localization of the dysfunction is presently unknown. Sites of pathogenesis that have been mentioned are the basal ganglia, the limbic system, the (pre)frontal cortex, and the thalamus (Singer, 1997; Singer & Walkup, 1991; Van Woerkom, Van de Wetering, & Buitelaar, 1996).

Motor and vocal tics are behaviorally at the core of TS. Motor tics consist of intermittent movements. They are defined as simple if the movements are brief and involve only one muscle group. They are considered complex if they appear as longer, more purposeful sequential movements, such as hopping or writing the same word over and over. Vocal tics consist of abnormal sounds and noises. Because not all the abnormal sounds and noises made by patients with tics are produced by the vocal cords, the term "phonic tics" is to be preferred over "vocal tics." (Jankovic, 1997). Phonic tics are considered simple when sudden, fast, single meaningless sounds or words are uttered. Linguistically meaningful utterances, on the other hand, are classified as complex phonic tics. These are exemplified by rituals, unusual accents, and change in speech intensity (Bruun, Cohen, & Leckman, 1997). Coprolalia and echolalia also belong to the category of complex tics. They are defined, respectively, as

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