Beginning in spring 2019, movement disorder specialists around the world who specialize in diagnosis and treatment of people with tic disorders have seen the emergence of a new phenomenon of acute-onset tic-like behaviors in young people. Although initially it has been speculated that symptoms may represent “tic attacks” in patients with tic disorders or a rare variant of Tourette syndrome with acute onset, soon it became clear that these acute-onset tic-like symptoms are functional in nature. The emergence of this new and so far unknown presentation of a functional neurological disorder (FND) has been linked, on the one hand, to social media use and presentation of tic-like behavior of popular YouTube and TikTok influencers and, on the other hand, to consequences of the coronavirus disease 2019 (COVID-19) pandemic. Over the past 2 years, the world has been through an incredible period of change. Normal activities and behaviors such as going to school or work, travel, meeting others face-to-face, and even hugging our loved ones have been stopped or significantly curtailed. These restrictions have occurred in a climate of fear and uncertainty: fear and uncertainty for personal and family health, economic survival, and the future of society as we (used to) know it. The impacts of death, illness, and sudden restriction of freedoms continue to reverberate throughout local, national, and international society.

Two articles in this issue of Movement Disorders address this important and emerging phenomenon of acute-onset tic-like behaviors and seek to understand its causes and treatment. Pringsheim et al describe a cohort of 290 young people in the Calgary Tic Disorders Registry gathered between 2012 and June 2021. They compared 20 patients from the registry who had rapid onset of tic-like behaviors from March 2020 onward (ie, during the pandemic) with the remainder of the cohort. Those with tic-like behaviors were older, more likely to be female, and had higher severity as rated by the Yale Global Tic Severity Scale. Tic-like movements and vocalizations tended to be more complex with a lack of typical rostrocaudal distribution of movements, and most had copro-phenomena with a large number of bizarre phrases, swear words, insults and offensive statements, and self-injurious or externally injurious movements. When controlling for age and sex, there was a significant relationship between a diagnosis of functional tic-like behaviors and anxiety and depressive disorders. All those with such behaviors reported accessing content on social media (mainly TikTok) relating to people claiming to suffer from tics or Tourette syndrome.

Paulus et al describe a cohort of 13 patients with rapid-onset tic-like behaviors that the authors also link to exposure to social media, particularly the YouTube Channel “Gewitter im Kopf” (“Thunderstorm in the head”), where a young man presents with symptoms atypical for Tourette syndrome, such as complex, variable, often continuous movements and elaborated and variable swear words and offensive phrases. Demographic and clinical features were similar to the Pringsheim et al cohort with respect to age at onset, severity of symptoms, and predominance of complex motor and vocal phenomena predominantly involving the trunk and arms and lack of waxing and waning. Different from Pringsheim et al’s study, the group comprised more males than females, although the ratio was smaller than seen in Tourette samples. In this...
small group of patients, several clinical features were not
different between this sample and those with Tourette
syndrome, including premonitory sensations, ability to
suppress movements and vocalizations, as well as history
(self-reported) of autistic spectrum disorder, attention defi-
cit/hyperactivity disorder, and obsessive-compulsive disor-
der. The authors did not formally assess levels of anxiety
and depression.

What do these two cohorts tell us when added
together with previously published work on sudden
onset of tic-like behaviors and previous work on
functional tic-like symptoms more generally?

First, they clearly document an explosive presentation
of a FND with “Tourette-like” symptoms. Although at
first glance, some similarities with clinical presentation
of Tourette syndrome can be found, a closer look, how-
ever, reveals several obvious differences, including age
of onset, course of symptoms, and number and kind of
movement and vocalization. Because most of these
patients had been misdiagnosed with Tourette syndrome
before being seen at the specialist center, it is of utmost
importance not to automatically make the diagnosis
of Tourette syndrome in all those patients with otherwise
unexplained jerks, vocalizations, and copro-phenomena,
but also to consider the diagnosis of a functional disor-
der. The typical onset of tics is discrete with simple
motor tics such as eye blinking between the age of
5 and 7 years with typical waxing and waning course
thereafter. In other words, rapid onset of tic-like symp-
toms with complex movements and swear words well
after the age of 10 years with constant symptom pro-
gression excludes the diagnosis of Tourette syndrome.

Second, although patients with functional tic-like
behaviors were generally experiencing symptoms of a
higher severity than patients with Tourette syndrome,
in many cases an incongruity between reported severity
and function is obvious. For example, patients and their
families often report that because of the symptoms,
unwanted obligations can no longer be performed,
while favorite activities can be conducted without any
restrictions. Some of the patients even started to present
their own symptoms on social media.

Third, there is an interesting association between
development of functional tic-like behaviors and depressive symptoms and anxiety, suggesting that these
symptoms may be an additional risk factor for the
development of functional “Tourette-like” behaviors.

Fourth, early diagnosis is key, and these publications
will help in the recognition of the phenotype and early
diagnostic explanation. Accelerating the diagnostic
and diagnostic explanation process is likely to lead to better
outcomes going by previous evidence in people with
FND. Some clinicians have reported that symptoms
may even stop immediately after exclusion of the diagno-
sis of Tourette syndrome and adequate explanation and
education.

Fifth, there is increasing evidence that people with
Tourette syndrome may also develop rapid-onset func-
tional tic-like behaviors. Such an overlap between
Tourette syndrome and FND has been reported before
in a small number of cases. It is possible that in the past
this coincidence of tics and functional tic-like symp-
toms has been overlooked in a substantial proportion
of patients with Tourette syndrome, potentially leading
to escalation of medical (and even consideration of sur-
gical) treatment.

Lastly, there is the issue of social drivers to illness and
the expression of illness. This is not a new phenomenon,
as seen in mass sociogenic illnesses, some of which have
involved tic-like behaviors. Recently, the term mass
social media-induced illness has been suggested for this
new type of mass sociogenic illness spread solely via
social media. Indeed, authors have noted the presence
of rapid-onset tic-like behaviors in the context of social
media viewing before the pandemic. The pervasive,
international nature of social media massively increases
the potential reach of (mis)information and the gener-
ation of illness expectations and beliefs that are incorrect
and that may trigger and escalate symptoms, particularly
in those who are vulnerable. This process also harms a
major medical benefit of the information revolution pro-
vided by the internet and social media. This benefit is the
easy access to reliable information about medical prob-
lems and the dissemination of self-management and
other therapeutic advice. As highlighted in the article by
Paulus et al., Tourette patient organizations have pushed
back against the depictions on social media of people with
functional tic-like behaviors as being typical of
Tourette syndrome, and other organizations and socie-
ties, such as the International Parkinson’s and Movement
Disorder Society, could possibly do the same. Movement
disorders in those with functional movement disorders
are often severe, and the uncertainty and lack of support
that often characterizes the relationship between such
patients and healthcare professionals may lead them to
be more likely to post videos of themselves online,
seeking help and validation. Previous work has
highlighted this on YouTube, where the most popular
videos related to different movement disorders were
judged by experts to be most likely videos of people with
functional movement disorders. Interestingly, in this
study from 2011, the only movement disorder category
where this was not the case was people with tics. Perhaps,
at least in part, the patients reported in these two
reports represent a move toward the norm of functional
movement disorders on social media.
1. Heyman I, Liang H, Hedderly T. COVID-19 related increase in childhood tics and tic-like attacks. Arch Dis Child 2021;106:420–421. https://doi.org/10.1136/archdischild-2021-321748

2. Buonsenso D, De Rose C, Mariotti P. Children experienced new or worsening tic issues when they were separated from their parents during the Italian COVID-19 lockdown. Acta Paediatr 2020;110(2):394–396. https://doi.org/10.1111/apa.15684

3. Müller-Vahl KR, Pisarenko A, Jakubovski E, Fremer C. Stop that! It’s not Tourette’s but a new type of mass sociogenic illness. Brain 2023;awab316. https://doi.org/10.1093/brain/awab316

4. Hull M, Parnes M. Tics and TikTok: functional tics spread through social media. Mov Disord Clin Pract. https://doi.org/10.1002/mdc3.13267

5. Hull M, Parnes M, Jankovic J. Increased incidence of functional (psychogenic) movement disorders in children and adults amidst the COVID-19 pandemic: a cross-sectional study. Neurol Clin Pract 2021;11:e686–e690. https://doi.org/10.1212/CPJ.0000000000001082

6. Pringsheim T, Ganos C, McGuire JF, Hedderly T, Woods D, Gilbert DL, et al. Rapid onset functional tic-like behaviors in young females during the COVID-19 pandemic. Mov Disord 2021. https://doi.org/10.1002/mds.28778. Epub ahead of print. PMID: 34387394; PMCID: PMC8441698

7. Paulus T, Bäumer T, Verrel J, Weissbach A, Roessner V, Beste C, et al. Pandemic tic-like behaviors following social media consumption. Mov Disord 2021. https://doi.org/10.1002/mds.28800. PMID: 34558735.

8. Pringsheim T, Martino D. Rapid onset of functional tic-like behaviours in young adults during the COVID-19 pandemic. Eur J Neurol 2021;28:3805–3808. https://doi.org/10.1111/ene.15034

9. Ganos C, Martino D, Espay AJ, Lang AE, Bhatta KP, Edwards MJ. Tics and functional tic-like movements: can we tell them apart? Neurology 2019;93:750–758. https://doi.org/10.1212/01.WNL.0000000000008372

10. McKenzie P, Oto M, Russell A, Pelosi A, Duncan R. Early outcomes and predictors in 260 patients with psychogenic nonepileptic attacks. Neurology 2010;74:64–69. https://doi.org/10.1212/WNL.0b013e3181c7da6a

11. Mink JW. Conversion disorder and mass psychogenic illness in child neurology. Ann N Y Acad Sci 2013;1304:40–44. https://doi.org/10.1111/nyas.12298

12. Dominus S. What happened to the girls in Le Roy. The New York Times. https://www.nytimes.com/2012/03/11/magazine/teenage-girls-twitching-le-roy.html. Published March 7, 2012. Accessed July 17, 2021.

13. Stamelou M, Edwards MJ, Espay AJ, Fung VSC, Hallett M, Lang AE, et al. Movement disorders on YouTube—caveat spectator. N Engl J Med 2011;365:1160–1161. https://doi.org/10.1056/NEJMec1107673