

What is DAMP Syndrome ?

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The DAMP syndrome, a medical concept of developmental disorder that stands for deficits in attention, motor control and perception, originally proposed by Gillberg of Sweden and others, has been adopted in Japanese as it is due to lack of better Japanese words. While the concept is still unfamiliar in this country, it is clinically important.

DAMP was defined in the 1970s and must meet the following requirements: (1) cross-situational impairing attention deficit, with or without impairing hyperactivity/impulsivity, and (2) impairing deficit in at least one of the following areas; gross motor, fine motor, perception or speech-language, and (3) the absence of clear mental retardation and cerebral palsy/other major neurological disability. Severe DAMP is diagnosed in cases showing the combination of (1) and all of the deficits listed under (2).

Later, due to the fact that children with perceptual abnormality virtually always had some impairing motor control problems, and in order to comply with DSM, the international diagnostic criteria of the American Psychiatric Association, DAMP has been defined as the combination of ADHD (attention deficit/hyperactivity disorder) and DCD (developmental coordination disorder). Defined in this way, DAMP constitutes a sub-type of the diagnostic category of ADHD, accompanied by DCD.

Gillberg and others used this concept of DAMP to conduct large-scale cohort research on a continuous basis in multiple regions in Sweden, which show that 7.4% of all 7 year olds had ADHD alone, that 7.3% had DCD alone, and that 6.6% had the DAMP syndrome, the combination of both, out of which 1.7% had DAMP in severe form. DAMP accounted for about half of all the ADHD cases. In mental health terms, approximately 60% of those with severe DAMP are diagnosed as autistic spectrum disorder (PPD or pervasive developmental disorder according to DMS-IV based diagnosis). Further, about one half of those with PPD had Asperger syndrome. Some one third of those with DAMP had depressive disorder, and one tenth with conduct disorder. Follow-up research indicated that 65 to 80% of those surveyed had learning difficulties like reading, writing, or arithmetic, about one half had speech problems. Furthermore, as many as 58% of those covered by the research showed very poor psychosocial prognosis at the age of 22, and two-thirds of them were reportedly diagnosed as having antisocial personality

disorder, substance abuse problems, and bipolar disorder.

The ratio of those with very poor psycho-social prognosis among people with DAMP was four times higher than the general population. This percentage is very high, compared to the results of another survey done in the United States about prognosis for those with ADHD, which shows approx. 10 to 30% of people surveyed have either psychiatric problems, like severe depression or antisocial behaviors like substance abuse and criminal activities, or both types of problems. Fifteen percent of those with DAMP covered by the same study were diagnosed as having autistic spectrum disorders.

Finally I would like to consider the clinical significance of DAMP. In the first place, DCD is frequently observed among ADHD's coexisting disorders. Thus, those with DAMP, which comprises both disorders, are considered stable as a subtype of ADHD. The coexisting disorders of ADHD is roughly divided into the primary existing disorders that have close biological links to ADHD, and the secondary coexisting disorders that are formed through interactions with psycho-social factors. DCD, which is, together with learning disability, language disability, tic and excretion disorders, classified into the first category, is said to be a possible biological marker that indicated the severity of ADHD.

Gillsberg says that that is because DAMP, as compared to pure ADHD, could possibly have more severe executive function disorder. While they claim that about half of those with ADHD have coexisting DCD, research in Japan shows the coexistence ratio of 10%. This is probably because DCD tends to be overlooked unless diagnosed carefully, and because not all of those people with DCD are diagnosed as such due to difficulty with objective decisions. I believe that more attention must be paid to the coexistence of DCD in the future.

Secondly, people with DAMP show worse psycho-social prognosis than those with pure ADHD. When people are particularly clumsy in group work or interpersonal relationship, it can have impact on the development of self-awareness and readiness to get involved with others, which can influence the long-term socio-psychological prognosis. It will be probably important to keep in mind the severity of prognosis, including the possibility of coexisting or duplicate PDD, and make support arrangements early on, and to carefully track subsequent developments.

The third point, which is related to the last one, is the frequent duplication with PDD. While the coexistence or duplication between PDD and ADHD has been capturing attention in recent years, PDD's duplication with DAMP is quite prevalent. Whereas

the cause for such duplication is not yet fully identified, it is almost undeniable that DAMP is a more pervasive and severe disorder than ADHD in general. PDD research in recent years has predominantly considered the disability related to sociability and social communication as its core symptoms, and tried to interpret it as a continuous spectrum with normalcy. It is believed that those with PDD are slow in or have trouble with gaining theory of mind, or recognizing complicated emotions, due to some problems with their neural circuitry, which connects affects and cognition/decisions. It is assumed that as a result, empathy is hard to develop. Gillberg believes that empathy is, like intelligence, normally distributed by multifunctional genes, and that empathy-related disability includes not only PDD such as autism and Asperger syndrome, as core disorders, but also includes DAMP, Tourette, eating and compulsive personality disorders. When we are to understand PDD and its related disorder as an extension of normalcy, DAMP, which is more common and is positioned closer to typical development, will provide interesting clue as we try to understand PDD itself and psychological development that are linked to sociability and cooperativeness.