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Do You Have the Music Gene? Role of *AVPR1A* Gene in Musical Traits

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EDITORIAL

"Music is a friend, that makes a happy moment happier, helps me get through a sad phase, makes me float when I'm already high, lifts me up when I'm really down.

I cannot define music, because music defines me."

-Dr Sowmya M

Singer

MUSIC COMES WITH A REWARD VALUE

Music always had a fundamental role in evolution history of human beings. It is inherent to all the current civilisations and also in the past. Research recommends that while decoding the long evolutionary past, capability of human beings to practice and understand music is a biological adaptation essential for survival and reproduction. They also suggest that music has a genetic and evolutionary link with language. Studies show that musical activities leads to raise in dopamine levels suggesting a that it could deliver a reward value.[1]

MUSIC GENETICS RESEARCH

Human beings in general accede to an inherent form of musicality, whose expression greatly relies on the genetic factors.[1] The genetic music studies are used to discover the genetic mechanisms underpinning the etiology of music traits. They also establish the neuroscientific conclusions of the neurobiological root of explicit music functions and behaviors.[2]

CHROMOSOMES AND MUSICALITY

Quite a few loci on several chromosomes has been linked with different musical traits.

Chromosome 8q; loci 8q21 and 8q24: Absolute pitch (AP) ability

Chromosome 4; loci 4p14 and 4q22: Music perception and pitch discrimination

Chromosome 4; locus 4q23: Pitch accuracy [2]

MUSICAL GENES

The music genetics research has revealed the role of several genes coding for different musical traits.

1.Thegene *AVPR1A* on chromosome 12q: music listening and music perception

2.Thegene *SLC6A4* : music memory and choir participation

The genetic interactions between the *AVPR1A* and *SLC6A4* are responsible for the overlapping neurobiological circuits that are encoding social cognition, communicative behavior and music functions.[2]

THE *AVPR1A* GENE

Research strongly suggests that musical activities are closely linked with human cognitive, communicative and social skills. The cognitive functions like memory, learning are regulated by the hormone arginine vasopressin (AVP) and its receptor AVPR1A controls. The gene *AVPR1A* acts via the neurobiological pathways influencing the functioning of human social behaviour. It plays a central role in prompting music traits such as music memory, perception and listening along with regulating cognitive functions, modifying social behavior, persuading memory and learning. Recent genetic music studies showed that higher musicality scores are associated with RS1 polymorphism of the *AVPR1A* gene.[1]

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