

# Frisson

## When you are the music

**Aesthetic chills** are a psychophysiological response characterized by goosebumps (piloerection), shivers, and tingling sensations. They are mechanistically distinct from simple pleasure; chills represent peak **emotional arousal**. This experience is fundamentally linked to the brain's reward circuitry, specifically the release of dopamine in the striatum.

When the beat drops, or the harmony resolves—the neural activity shifts ventrally to the nucleus accumbens (NAcc). This is the moment of the chill. **Dopamine** floods the system in a way that mirrors the biological high of food, sex, or cocaine. This temporal split explains why the "chase" of the melody is just as chemically potent as the finale, the brain rewards the prediction (anticipation) differently than the outcome (consumption). Physiologically, chills are consistently associated with increased sympathetic nervous system activity, including higher skin conductance (SCR), heart rate, and respiration depth.



Two people listen to Miserere by Allegri (a validated "Gold Standard" chill-inducer). One person feels nothing. The other feels a cold shiver down their neck and arms. The difference often lies in personality. The person experiencing the chill likely scores high in **Openness to Experience**.

Specifically, this person is likely high in the "**Fantasy**" and "**Ideas**" sub-facets of Openness. They are not just feeling the music; they are cognitively immersing themselves in it, engaging in "active imagination" and rapidly processing the complex patterns. This propensity is partially written into their DNA, with twin studies suggesting the tendency to feel chills is roughly 36% heritable, and women appearing slightly more prone to reporting chills than men.

Consider a choir or band performing. There is a specific moment where the ensemble creates a series of dissonant chords that finally resolve. For the musicians, this often manifests as a feeling that the performance has "clicked" or that the group is operating as "one mind".

This is not just a metaphor; it is an intensification of communal sharing relations, often linked to the social emotion **kama muta** (being moved by love/connection). Surveyed musicians describe this as "electric," a moment of "perfection" or "alignment" that feels greater than the sum of its parts. Even if you are listening alone in your room, if you see a digital map indicating others are listening with you, the "illusory" social presence significantly boosts the pleasure and intensity of the chills, hijacking our hardwiring for social bonding.

Imagine watching a tense scene in Jurassic Park or a magic trick that defies logic. The uncertainty of the situation could cause **anxiety** (a fear of the unknown). However, if the stimulus is aesthetically appreciated, the chill response acts as a "valve". Instead of retreating in anxiety, the aesthetic appreciation signals that this uncertainty is an **opportunity to learn**. The emotional state flips from anxiety to **curiosity**. The chill signals that the brain is successfully updating its internal models of the world, making the unknown feel exciting rather than threatening. This mechanism is so potent that listening to chill-inducing music can make people more willing to risk electric shocks just to satisfy their curiosity about a magic trick.

You are listening to a favorite song. It makes you feel energetic, your skin tingles, and you check your arm to see goosebumps. This is a chill: a marker of physiological arousal (increased heart rate and skin conductance) and is essentially a reward signal.

Conversely, if the song makes you feel physically calmer, your breathing slows down, and you feel a lump in your throat or weep, this is a tear response. While chills are akin to the "shivers" of energy and mixed happy/sad **euphoria**, tears are closer to a **cathartic** release involving physiological calming. A song that induces chills is often perceived as both happy and sad, while a song that induces tears is perceived primarily as sad and calm.

