Lyme disease has been linked to decreased sound tolerance (DST).

Hyperacusis reflects abnormally strong reactivity of the auditory pathways to sound (over amplification of sound-evoked activity), which in turn yields activation of the limbic and autonomic nervous systems (which are responsible for emotional and body reactions). The functional connections between the auditory, the limbic and autonomous nervous systems are normal.

Hyperacusis is treated in TRT by desensitization with variety of sounds combined with specific counseling aimed at DST. In the case of normal hearing levels, sound generators are recommended as part of the sound therapy. It is specifically important for hyperacusis patients to have an enriched sound environment day and night, 24/7.

Normally, the gain within the auditory pathways in continuously adjusted at the peripheral and central levels.

Hyperacusis might result from changes at both peripheral and central levels. Modification in the central auditory pathways may produce central hyperacusis. Changes in the OHC may produce peripheral hyperacusis. Desensitization procedure can change both peripheral and central gain.