

Hearing issues Doc Talk

Sound advice to fight hearing loss

Lower the volume on your personal audio devices and avoid standing near loudspeakers or loud sources of noise



Amanda Cheang

Mr L, who is in his mid-30s, came to my clinic after having ringing sounds in both his ears (tinnitus) for two years. He had become accustomed to the tinnitus, but was concerned that conversations sounded muffled to him in noisy environments, especially in mask-on settings. On further inquiry, he admitted to a routine of listening to loud music via headphones since his teenage years. Mr K, a retiree in his late 60s, saw me with a complaint of hearing loss for more than 30 years. He attributed it to working in the marine industry, where he was constantly exposed to loud machinery. As noise regulations at the workplace were not strictly enforced in the past, he often worked without hearing protection. Like Mr L, he noticed significant disability from his hearing impairment after mandatory mask-wearing began and decided to seek medical help. Both were found to have moderate high-frequency hearing

loss – especially at the 4kHz frequency – on their hearing tests, a pattern typical of noise-induced hearing loss (NIHL). The theme for this year's World Hearing Day, which fell on March 3, is "To hear for life, listen with care". It focuses on preventing hearing loss through safe listening. Of the many types and causes of hearing loss, NIHL is one of the few that is widely preventable. Sound is transmitted via the eardrum and middle-ear bones into the inner ear through subtle vibrations that create a ripple in the inner-ear fluid. This fluid movement is processed by delicate cells within the inner ear to create neural signals transmitted to the brain. Exposure to loud sounds results in abnormally large movements of inner-ear fluid, akin to a tsunami destroying structures in its path. Once destroyed, these delicate structures do not regenerate, resulting in permanent and irreversible hearing loss. In some people, an episode of loud noise exposure may result in temporary hearing loss that recovers after 24 to 48 hours. This is termed a temporary threshold shift and should be regarded as a prelude to potentially irreversible hearing loss if the noise exposure is not discontinued. NIHL usually affects high-frequency hearing. This can manifest as straining to hear conversations in noisy environments and mishearing words due to difficulty differentiating high-pitched consonant sounds (for example, sh, s, th). Some patients may notice the need to turn up the volume on their television or radio. Persons



with hearing loss often rely on some degree of lip-reading, which has been hindered by mask-wearing. Often, the patient's close companions complain that they are frustrated at raising their voices or repeating themselves to be heard. Some people with NIHL also experience bothersome tinnitus, which can cause loss of concentration and sleep disturbances. So, how loud is too loud? The

volume of a normal conversation is about 60dB, whereas a shouting conversation is approximately 80 to 90dB. Loudspeakers at a concert can be as loud as 110 to 120dB. Any exposure to levels of loudness greater than 85dB for eight hours or more puts the listener at risk of NIHL. This risk increases with a longer duration of exposure. As a general guide, if you have to shout over the noise to be heard, it is too loud. Additionally, the duration of allowable exposure decreases as the loudness level increases. A person listening to music on earphones at 100dB for 15 minutes would experience the equivalent detrimental effects as an industrial worker exposed to 85dB of noise in an eight-hour period. NIHL from recreational exposure can result from listening to loud music on personal audio devices such as headphones or loudspeakers at concerts or KTVs. A study published in the Singapore Medical Journal in 2014 assessed the music-listening habits of 1,928 students aged 16 to 21. It found that one in six youth is at risk of developing NIHL from listening to excessively loud music through personal audio devices. NIHL from occupational exposure at the workplace has decreased in recent years, but remains the second most common occupational disease. According to the Ministry of Manpower's Workplace Safety and Health (WSH) Report 2020, the metalworking industry was the top contributor for workplaces with noise hazards. Other industries included marine and manufacturing. As NIHL is irreversible, prevention is key. People should lower the volume

on their personal audio devices. They should also avoid standing near loudspeakers or loud sources of noise. If this cannot be done, then protective devices such as earplugs or earmuffs should be properly worn. Workplaces with noise hazards are required to regularly monitor noise levels under WSH regulations. These workplaces should also implement a comprehensive Hearing Conservation Programme to protect their employees' hearing health, including annual hearing tests and education on the importance and proper use of hearing protective devices. In patients diagnosed with NIHL, all hope is not lost. Hearing aids are a useful means of amplification to improve hearing clarity and can be customised to the user's needs. Hearing rehabilitation therapy is offered in certain centres, such as Tan Tock Seng Hospital, which aims to train hearing aid users in techniques to better overcome their disability. In patients with bilateral severe to profound hearing loss, cochlear implant surgery can be considered. Both Mr L and Mr K were eventually fitted with hearing aids and experienced significant improvement in their clarity of hearing and quality of life. Despite this, I am certain that if they could turn back time, they would adhere to the advice, "To hear for life, listen with care".

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ask the experts

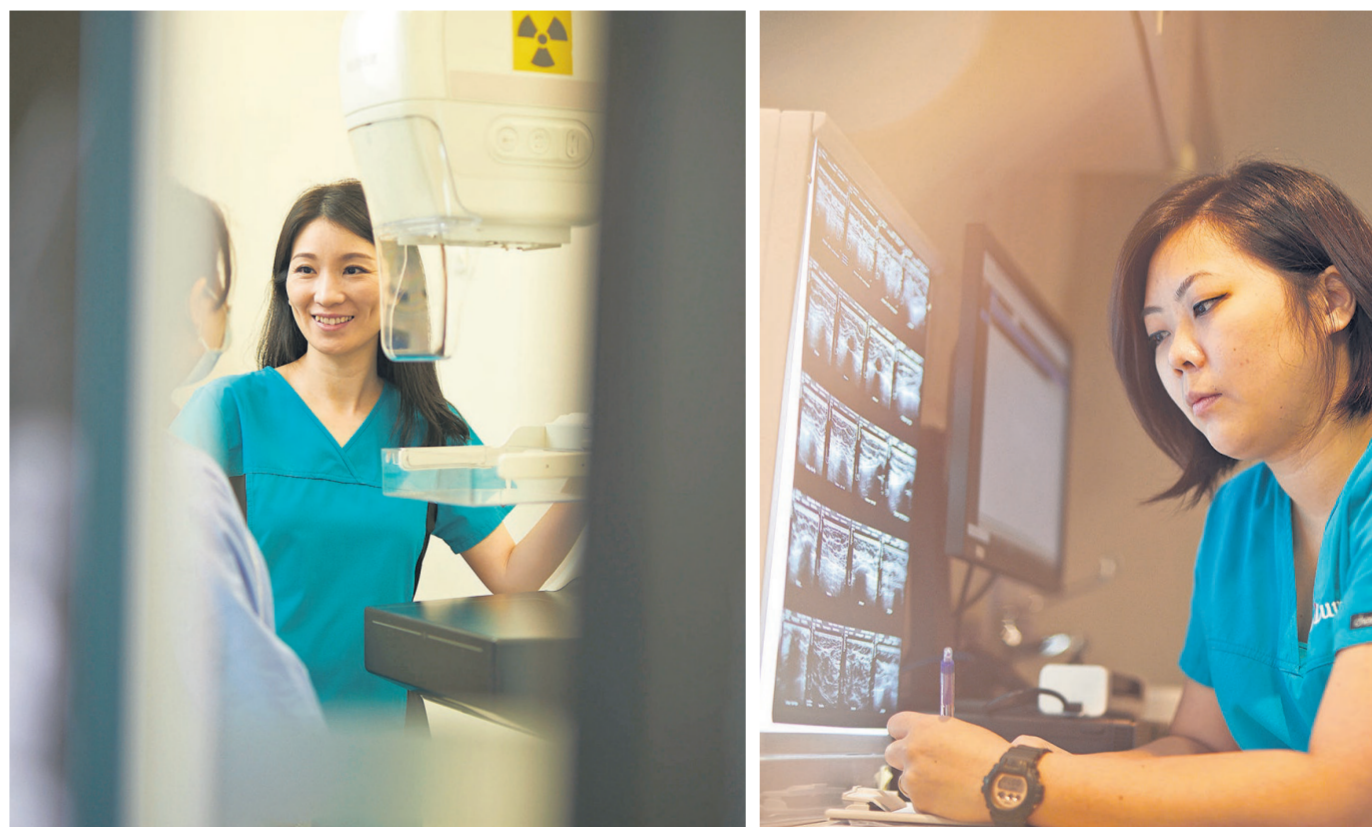
What happens when my mammogram is abnormal

An unusual screening result does not instantly mean that you have breast cancer, says Senior Consultant and Breast Surgeon, Dr Lee Wai Peng

According to the Singapore Cancer Registry Annual Report 2018, over 2,000 women are diagnosed with breast cancer each year, and one in 13 women will get it in their lifetime. That is why it is the most common type of cancer affecting women in Singapore. While breast cancer usually occurs in older women between the ages of 40 and 60, it can affect younger women too. One in six women in Singapore under the age of 45 has been diagnosed with more aggressive forms of the disease, notes the Breast Cancer Foundation. Going for a mammogram is the best way to detect breast cancer early, says Dr Lee Wai Peng, Senior Consultant and Breast Surgeon at Solis Breast Care and Surgery Centre. Here, she shares more about the implications of abnormal mammogram screening results.

Q When do you need to go for a mammogram?
 A mammogram is an X-ray of the breast and is used to look for any abnormal lesion. It is non-invasive and one of the simplest screening tests for breast cancer. A mammogram can pick up cancers at a very early and treatable phase, way before malignant lumps can be felt. When performed regularly, it improves one's chances of survival, and women may even avoid having to go for extensive treatment such as chemotherapy. The Health Promotion Board recommends women aged 40 to 49 to go for mammogram screening yearly, and once every two years for those above 50 and who are asymptomatic. Healthy women below 40 with no breast-related symptoms should consult their doctors before going for a mammogram. After all, they often have extremely dense breasts, which will render mammograms less effective.

Q What does an abnormal mammogram result mean?
 It means that there is a possibly suspicious lesion seen on the X-ray image of the breast. However, it does not automatically mean that the patient has cancer. It depends on whether the underlying cause of the lesion is benign or malignant, although the possibility of cancer cannot be ruled out. There are three possible outcomes:
1. Benign
 The lesion is non-cancerous and may be fibroadenomas – non-cancerous breast nodules, which are common among women under 30 – breast cysts, which are fluid sacs in the breast, or fibrocystic changes, in which the breast feels lumpy. These conditions can occur in any woman from her 20s until she reaches menopause.
2. High risk
 High-risk lesions may include atypical ductal hyperplasia (a pre-cancerous condition of abnormal cells in the milk ducts) or lobular carcinoma in situ (cells that look cancerous in the milk glands), also known as LCIS. Such high-risk lesions are often advised for complete removal upon detection. If left alone, they have a high chance of developing into invasive breast cancer. They make up five to 20 per cent of abnormal mammogram findings.
3. Malignant
 If a malignant lesion is detected, it means breast cancer. Your doctor will advise on the appropriate course of treatment.
Q What happens after an abnormal mammogram result?
 During consultation with a breast specialist, the doctor can evaluate for any breast-related



Going for annual mammogram screenings is the recommended way to detect breast cancer early and begin treatment if required. PHOTOS: SOLIS BREAST CARE AND SURGERY CENTRE

symptoms, such as pain, swelling or lumps, or any predisposing risk factors for breast cancer. A clinical examination is usually done to look for signs such as breast lumps or nipple changes that might account for the mammographic abnormality. This may be followed by further appropriate imaging such as targeted mammography, 3D mammogram and an ultrasound to determine the cause of the abnormality. A breast biopsy may be offered to patients if the results from these imaging methods remain inconclusive for breast cancer. Some 10 per cent of women with abnormal mammograms will need some form of biopsy. Of this group who undergo a biopsy, a further 80 per cent will have a benign result. A breast biopsy can be performed via minimally invasive methods such as vacuum-assisted biopsy with the aid of ultrasound or mammogram. Currently, vacuum-assisted biopsy is recommended to remove benign breast lumps because it is minimally invasive and easily tolerated by women of all age groups. There might also be a possibility that

mammograms might miss extremely minute lesions, especially in women with extremely dense breasts. Advanced imaging technology, such as 3D or digital mammography, can help pick up these less obvious lesions. If the biopsy result is malignant, the patient will be advised on appropriate treatment. The doctor may first request the patient to undergo more detailed tests to determine what type of cancer she has and if the cancer has spread beyond the breast. If the tumour is detected at an early stage and has not spread beyond the breast, the patient can opt for breast-conserving surgery, which removes cancer cells and some neighbouring tissues, without the need for a mastectomy (complete removal of the breast). It is prudent to seek a specialist consultation to evaluate the abnormality. Most of the time, this does not equate to breast cancer. Even if cancer is detected, it is often at a very early stage.

Visit Solis at solis.sg to find out more or call 6979-9011 to book an appointment with our breast specialist today.



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