

In a well managed pool with adequate residual chlorine this occurrence is probably quite unusual. The organisms which cause the trouble are usually those which are already present in the nose or throat of the swimmer and are carried into the sinuses and middle ear by water.

If bathers will recall that they are no longer as well adapted to water as were their ancestors of the Mesozoic Age and will exercise proper precautions, they may save themselves a good deal of trouble. When in the pool they should breathe through the mouth or avoid getting water and nasal secretions into the sinuses. Eustachian tubes, or nasal passages. If they will exhale through both the nose and mouth they will have a quicker and stronger exhalation than through either alone.

The opening of the mouth relieves the undue pressure which may force infected material into the nasal passages. It also permits air and water to flow into the nose and mouth with a minimum amount entering the sinuses and Eustachian tubes. Improper exhaling with the head submerged may cause them to become infected. Vigorous blowing of the nose after emerging from the water may so force water into the sinuses and Eustachian tubes that inflammation may result.

In diving the diver should inspire before entering the water and not exhale at all until again on the surface. This will largely prevent getting water into the sinuses and Eustachian tubes. By holding the breath the entire time the diver is in "high pressure", a nearer equal force is exerted on both sides of the ear drums. Deep diving causes considerable pressure on the ear drums and thus forces air out of the Eustachian tubes. When the diver comes to the surface this pressure is relieved and air again enters them. If the breath is held until the diver emerges for air less water enters the nasal passages when the Eustachian tubes are again inflated and the danger to the middle ear is correspondingly decreased.

It would seem that the nearer constant the inner-outer pressure remains on the ear drums, when the breath is held in diving, the less sudden the distension by means of water pressure. With no exhalation under water the inner pressure necessary for nasal expiration which might force water and secretions into the sinuses and Eustachian tubes is absent.

When the breath is held under water the inner-outer pressure on the ear drums, though uneven, remains constant so that there is less reverse distension than if the exhalation took place below the surface. If on rising to the surface the diver promptly expires through both the nose and mouth, the sudden entry of more air into the Eustachian tubes by the removal of outer water pressure does not cause suction of water and secretions. Diving feet first may permit water to enter the nose forcibly.

Persons who have had repeated ear infections or recurrent sinusitis should avoid swimming or exercise special precautions. Those with damaged ear drums and mastoid operations are, on the whole, better off out of water. Individuals with colds should not dive and should keep their heads out of the water in swimming. For the benefit of themselves, as well as for the good of others, they should stay away from the pool until free of their respiratory infection. Divers should wear rubber caps over the ears or plug them with greased cotton to prevent infection of the drums and external auditory canals.

Swimming and Skin Disease

Swimming has a four-fold relationship to skin diseases. It may cause itching, a pruritis, resulting from contact with water. The condition lasts from a few minutes to a half hour. Young adults with dry skin are most subject to this disturbance. It is usually of no significance and responds well to treatment.