

**SUMMARY: Focuses on children's chronic ear infections, why they are caused, and how osteopathy can help.**

## **Osteopathic Treatment and Ear Infections**

### **The Problem of Ear Infections**

Ear infections are the cause of more pediatric doctor visits in the first three years of life than any other medical problem. One child in three develops chronic fluid accumulation in the middle ear making the child prone to recurrent ear infections, and potentially causing minor hearing loss. There are many reasons for the prevalence of this medical problem. Due to the immaturity of their immune systems, young children have frequent colds, and ear infections can follow as a complication. Some previously healthy children begin to have ear infections when undergoing orthodontic correction. Some children have dairy or other nutritional sensitivities which contribute to the frequency or severity of infections. The most common predisposing factor, however, is early childhood trauma to the head, occurring either in the birth process or in early childhood injuries. Even C-section babies can be affected. When the structural restrictions caused by these traumas are resolved, the vast majority of children have a significantly reduced incidence of infection and a noticeable improvement in hearing.

The presence of fluid in the middle ear offers a hospitable environment for the growth of the organisms which cause ear infections. If the middle ear is free of fluid, ear infections are rare. Medical opinion differs on the solutions to fluid retention. The standard medical approach is to treat the infections with antibiotics. If fluid remains after the infection has cleared, a low level of antibiotic is often prescribed preventively over a long period of time. If infections or hearing loss persist, ventilating tubes are surgically placed. The osteopathic approach is to correct the cranial restrictions which are causing fluid retention and impeding fluid drainage.

### **Why Does Fluid Accumulate?**

There are two widely held theories. One is based on the premise that as gases diffuse into the blood vessels of the middle ear cavity, the resultant negative pressure allows serum to exude from the blood vessels into the middle ear cavity. The second theory proposes that the fluid in the middle ear cavity is a product of an inflammatory process of the mucous membranes. An osteopathic theory concerns the excess fluid which can accumulate in the back of children's throats during teething, a common cold or from nursing or drinking a bottle while lying down. This fluid lies close to the opening of the eustachian tube which drains and ventilates the middle ear. When fluid remains present in the back of the throat, it may make its way, via the eustachian tube, into the middle ear cavity. Once there, it has a tendency to stay. Swelling of the mucous membranes worsens the problem by blocking the eustachian tube. The resultant loss of atmospheric air pressure in the middle ear compounds the problem.

Unfortunately, anatomy is no friend to this situation before about age four. The beautiful, round baby faces of infants and toddlers are associated with a eustachian tube which is nearly horizontal. Around age four or so, a child gains more vertical dimension in the face, and gravity can help in drainage. If one waited until the age of four or more, many children would literally outgrow the problem. However, the risks of more serious infections, the side-effects of prolonged antibiotic use and the risk of poor language development due to poor hearing make this an unacceptable solution.

### **I How Can Osteopathy Help?**

The small amount of motion present in the joint lines and membrane structures of the cranium (skull) has been well documented in osteopathic and other scientific sources. As the temporal bones of the cranium move in a normal manner, they assist the drainage of fluid through the eustachian tubes to the back of the throat. This normal mobility can be disturbed as a result of birth trauma or early childhood injuries. Osteopathic manipulative techniques can restore normal motion of the temporal bones as well as the whole cranial mechanism, and thus improve fluid drainage from the middle ear. If fluid is

not present, ear infections are rare. Manipulative treatment also facilitates lymphatic drainage in the neck and chest and can improve arterial blood supply and venous drainage. Through assisting the immune system in this way, the improved overall health of the body also helps prevent future infections.

### **How Much Treatment Is Needed?**

Children who suffer from recurrent ear infections often require weekly osteopathic treatment for a period of four to eight weeks. The duration and specific types of treatment offered vary with the individual child. Follow-up treatment on a periodic basis is essential to maintaining appropriate motion of the cranial mechanism and therefore the benefit of treatment. Osteopathic manipulative treatment addresses what is for many children the underlying cause of chronic ear infections.

The treatment itself is a gentle, non-invasive form of hands-on manipulation. If children cry or complain while being treated, it is rarely because of pain. More often it is because they don't want to be lying down. Most can be entertained successfully with songs, stories or toys.

### **Sinusitis**

Just as ear infections are sometimes a complication of the common cold, so are inflammation and infection of the sinus cavities. The same mucous membrane which lines the nose and back of the throat extends into the sinus cavities, out to the middle ear as the eustachian tube and down into the lungs (where inflammation results in bronchitis). The sinus cavities, though fewer and smaller in children, serve to warm and moisten the air we breathe. They too can fill with fluid and be unable to perform this function. Their ability to function normally is dependent on unrestricted mobility of the bones and membranes of the cranium. By the same principles that underlie the osteopathic treatment of ear infections, osteopathic manipulation can help restore normal sinus function.

A Doctor of Osteopathy (DO) is a fully licensed physician whose training includes, beyond the normal medical curriculum, extensive training in manual manipulation as a treatment to improve body function through addressing body structure. Although many osteopathic physicians are in family practice or providing specialty care, some have chosen to focus their practices on the hands-on approach which makes osteopathy unique. Of these, some have pursued additional training in cranial osteopathy, which is essential in the osteopathic treatment of children.

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