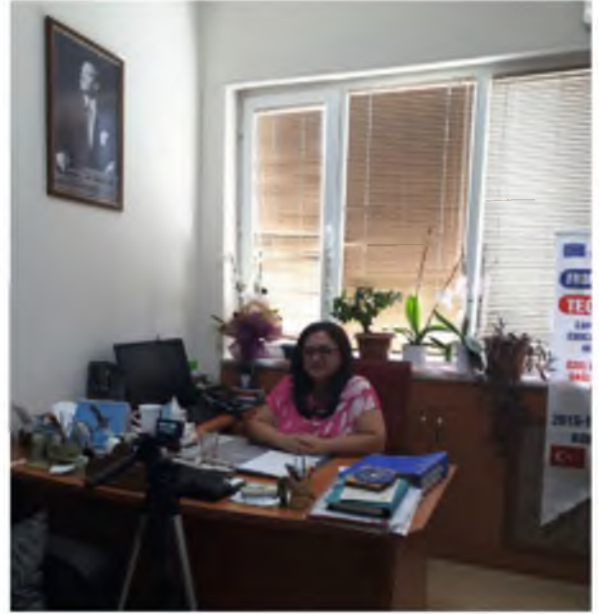
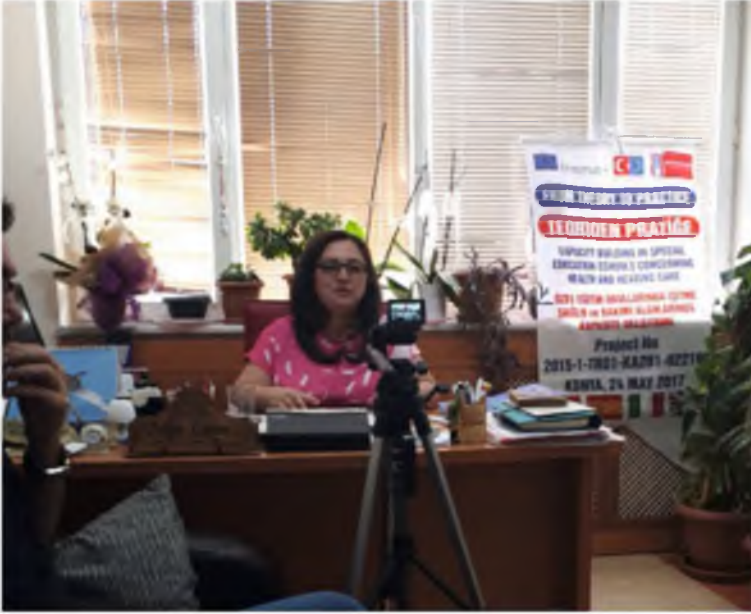


## INTERVIEW

Prof. Dr. Bahar ÇOLPAN



I am Dr. Bahar ÇOLPAN. I am an ear, nose and throat and head and neck surgeon specialist. I have been working in Konya Selçuk University for 10 years. I will give you information about the Cochlear implant today.

Cochlear implants are applied to persons with hearing loss in situations where the hearing aid is not adequate and the sounds are not sufficiently transmitted to the brain.

Who are applied Bionic ear (Cochlear implant)?

An adult patient who has not seen enough benefit from a hearing aid but who can speak. We can do this surgery if there is the ability to talk to a patient over 4 years old who has a hearing loss or a different illness.

If babies with newborns and hearing loss cannot benefit from hearing aids, bionic ear (cochlear implant) surgery can be performed starting from 1 year old. We do not do this surgery before first age (one year old). We want them to use hearing aids for at least 6 months. We want them to get rehabilitation services. If there is still no benefit from the hearing aid, we carry out bionic ear (cochlear implant) surgery.

We first try hearing aids for ones who have hearing loss after 2-4 years, we apply cochlear implant surgery if the hearing aid is not enough.

There are some conditions for the state to pay for cochlear implant surgery.

If this procedure is done until the age of 4, there is a state pension for patients.

If he / she is later lost hearing, can speak, and the hearing aid does not provide enough benefits, for the patients Later hearing loss, no talk, no rehabilitation training was received the state does not pay for this surgery. Because these people will not only hear some voices even if they are operated on.

Pre-evaluation of cochlear implant surgery:

1. Audiological evaluations. In these patients, device and device-free audiological tests are performed.
2. We determine how much hearing or hearing aid is available.
3. It is checked whether there are other illnesses such as eyesight, heart, kidney.
4. We carry out genetic researches.
5. Radiological evaluations are carry out to check that the patients' inner ear structures are capable of implantation and that the hearing nerves are full. If there's a problem here, brain stem surgery can be done.
6. Psychologically, it is checked whether the operation is appropriate, whether they can receive post-operative rehabilitation training, whether there is a mental (mental) problem.
7. After 4 years of age there shouldn't be more than 4 years between the age of their own and language development.

Expectations of families:

After the surgery, the child is not expected to hear, understand or speak everything. It's a process. For this, your child will need a rehabilitation training. If the parents are willing in this process



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## INTERVIEW

Prof. Dr. Bahar ÇOLPAN

if they receive a good rehabilitation training

they can get good results if they follow doctor examinations regularly.

Good education and right follow can make children understand and talk like their peers.

These patients must come to us without losing time so that good results can be obtained.

How is surgery done?

After the preparations, we hospitalize the patients one day before the surgery. The duration of surgery can be 2 hours for single ear and 3-4 hours for double ear. State payment is made in two ears.

In patients with some additional problems, we do 2nd surgery after 2-4 weeks.

After surgery, patients are followed in hospital for 3 days.

We have a meningitis vaccine 1 month before surgery.

These devices are lifetime devices. But according to the developing technology, the state is able to change these devices every 7 years. There is no easy deterioration in the inner apparatus. Developing technologies and innovations in external apparatuses can be applied immediately.

Recommendations to families:

The surgical area needs to be protected of hard ball hits, bumps and falls.

They need to protect the devices from water and moisture.

The devices need to be plugged in whenever they are awake.

Because the outer apparatus is held with magnets, they must take preventative measures and make children aware of it.

The choice of device is chosen according to the preferences of the families and the suitability of the child.

\* Children should be equipped and heard early so that the hearing and speaking center can develop.

Our biggest goal is to make the children feel sensitive and to make them speaking individuals through rehabilitation services.

Cochlear implant surgery has begun in our hospital in 2012. In the first years we did this surgery on 20-30 patients. Later on, this number continued to increase. Especially since January 2017,

If the state pays for 2 ear surgery our operation number is expected to reach 100 patients.

This surgery can be done in all the provinces that have a faculty of medicine or education research center in Turkey. Hospitals with sufficient staff can perform this surgery.

There is no harm in doing this operation n double ears. In the first few months of adaptation (acclimatization) a little trouble, but later it is customary. The advantage of being on two sides is that you can hear both ears, patient can determine the direction of voice.

If there is a problem with one ear, he/she will continue to be hear with the other ear.

Permission is required from the Ministry of Health for those who wish to have this operation performed on the 2nd ear. Our Ministry help on this matter.

It's easy to use this device. Magnetic part can be removed while sleeping, bathing and swimming in the sea.

It is not easy to break and destroyed. After surgery, we give a form to the family. In this form we describe the problems they will encounter and what they will do. We want them to have their checks regularly.

We want them to consult the doctor in ear infections. Installing the device is as easy as wearing a pair of glasses.

I suggest to you that you do not stay in quiet world. you need to make an early diagnosis and look for treatment. If you have a hearing problem, we want you to come to us.

We want to be the voice of your silent world.

Prof. Dr. BAHAR ÇOLPAN

## INTERVIEW

Prof. Dr. Esra YÜCEL



Hello. I am Esra YÜCEL. I am a faculty member in the audiology department of the faculty of health sciences at Hacettepe University. I continue pre- and post-operative evaluations and educational follow-up of children with cochlear implant users and educational follow-up of children using hearing aids.

Children's hearing needs are more than adults. Because children do not develop predictive skills, they have to take all the details of the hearing.

In children, a hearing problem should be detected in the first six months and a hearing aid should be fitted. Rehabilitation education should be started immediately. Hearing aids should be a quality device for children to hear all sounds in the best possible way. The appliance must be started at the earliest age and must be used in pairs. Installing the device is not enough. Children need to start their listening skills immediately. In order for speaking to be realized, perception, memory, and mental skills must be normal as well as hearing and listening.

Can a person who can hear distinguish - understand everything he/she hears?

We can hear the voices. For clarification, the voices must be experienced in frequent and up-to-date lives. This is necessary for normal people, also for hearing-impaired children. Sounds and experiences need to be combined during children's auditory training. The children will learn how quickly they meet with the sound in real life. But every child is different from the other and must be different in our expectations.

Who can benefit from cochlear implants?

If the hearing aid is not able to give enough speech warnings to the child,

In situations where the hearing aid and auditory perception system is not developed, the child goes through a lot of evaluation.

In addition to medical evaluations, cognitive and learning methods need to be identified.

It is then decided whether or not the child will benefit the hearing aid of the Cochlear implant.

Before the surgery, the family is also interviewed to learn about the expectancy of the family after implantation.

It is necessary to perform cochlear implant surgery by making evaluations between one and two years which is ideal.

A cochlear implant is a device that helps to hearing. Never substitute normal hearing.

Listening skills are very important in this period. Children who do not have the ability to listen with a hearing aid should definitely wear a cochlear implant. In this period, parents are also required to make activities to improve children's auditory knowledge and create environments.

After implantation



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## INTERVIEW

Prof. Dr. Esra YÜCEL

The parents need to do activities that will listen to all the voices for children. The child who starts to gain listening ability can give different responses to the voices. He/she may be uncomfortable with sounds not known before, and he/she may be totally unresponsive. They are all normal. In this process, parents may be skeptical about whether their children have heard of it.

The parents should not test the children and test them with voices. If the child realizes that they are being tested, they start to fail to respond. Families need to observe the children by preparing suitable environments.

As the listening skill develops in the child, he/she finds the source of his voice and records these voices in memory. The more experience (again) with sound, the easier it will be to remember what these sounds are.

In this period, the children want to have their parents do whatever they want. The parents must act according to their child's age and not have to do whatever they want.

Children after cochlear implant or device;

1. Start to react to the voices,
2. Start searching for the source of the voices,
3. Begin to separate the voices,
4. Begin to distinguish what the voices belong to,
5. Begin to respond to commands as behaviors
6. Begin to answer verbally.

In this process, the child needs to be trained for cognitive development.

What should the family do;

Special education for their children is required. Children and parents learn methods in educational institutions. The main job is to work together with your children about what they will do together. For this reason, parents should also participate in the trainings. The parents should not act like teachers at home. They need to treat other normal children as they behave. They need to apply what they see in education at home.

Educational institutions

The quality of special education institutions in our country is increasing day by day. In particular, special education faculties hearing impaired teachers, pre-school teachers, audiology graduates provide a major contribution to this field. Families need to know who will train their children in institutions where they will receive special education.

Trainers are required to prepare programs for families to apply at home. they need to show practices and provide consultancy services.

The parents are very confused and startled at the beginning of this process. Parents should tell that each child has individual differences, so that each child has a special programmer. It must be told that they can not compare children and that they need to be calm down.

They need to be social in this process. Other than educational institutions, they may consult to associations about their children. They have to participate in the seminars and have to improve themselves by going scientific studies.

Follow-up of educational development:

We make some evaluations at certain intervals. We perform audiological tests, auditory perception tests, psychological tests. Most importantly, the information we receive from the child's education and family observations. We evaluate all of them. we do these evaluations once every 3 months when the implant surgery was made and every 6 months for other years. As a result of these evaluations, the child's education program give us an idea of what he can go to, such as the school he can go to. Teachers should be supported for the children going to the school and their opinions and impressions should be evaluated.

We do cochlear implant surgery when the hearing aid is not enough. Sometimes the best cochlear implant is not enough to wear and make the best program. While some children can talk like normal children, some children may experience problems with voice recognition, distinction and producing voices. For this reason, personalized equipment and personalized training programs should be prepared. Individual characteristics need to be evaluated appropriately. For good results, different areas are required to collaborate.

Prof. Dr. Esra YÜCEL

## INTERVIEW

İşitme Engelliler Eğitmeni - Klinik Odyoloji Uzmanı Rasim ŞAHİN



1999 yılı Anadolu Ün. Eğitim Fak. İşitme Engelliler öğretmenliğinden mezun oldum. Çukurova Ün. Tıp Fak. KBB işitme engelliler eğitmeni ve klinik odyoloji uzmanı olarak göreve başladım. 18 yıldır bu meslekte çalışmalarım devam etmekteyim. Burada işitme engelli çocuklar ve aileleri ile çalışmalar yapmaktayız. Amacımız bu çocukları normal akranları gibi konuşan ve normal okullarda okuyabilen bireyler haline getirmek.

### Duymak önemli mi?

Dil gelişimi duymaya bağlıdır. Kaliteli bir konuşma için kaliteli bir duyma gereklidir.

### Cihazlandırma yaşı

Çocuklar ne kadar erken teşhis edilir ve cihazlandırılırsa konuşma gelişimi de o kadar kaliteli olmaktadır. Devletimiz çocuklar doğar doğmaz (doğum hemen) işitme taraması yaptığı için teşhis daha kolay ve çabuk olmaktadır. Yaşı büyük olsalar bile ne kadar çabuk cihazlandırılırsa, cihazın faydası okadar çok olacaktır.

### Cihazın kalitesi

İşitme cihazının kalitesi, kaliteli bir dil gelişimi için önemlidir. Çocuklar cihazlandırılırken kaybına en uygun kazanç sağlayacak cihaz takılmalıdır.

Piyasada birçok çeşitli cihaz bulunmaktadır. Alacağınız cihaz işitme kaybınıza ne kadar uygunsa alacağınız eğitim o kadar etkili olacaktır.

İşitme kaybında çeşitli derecede sınıflandırma var. Hafif, orta, ileri, çok ileri gibi. Hafif, orta, ileri derecede işitme kaybı çocuklarda işitme cihazı etkin biçimde kullanılabilir. Fakat çok ileri derecede işitme kaybı çocuklarda koklear implant daha faydalı olmaktadır.

Her çocuk için işitme cihazı denenmeli, işitme cihazından fayda göremeyen çocuklar koklear implanta yönlendirilmeli.

### Kimler koklear implant adayı....

İşitme cihazından yeterli fayda göremeyen çocuklar bir koklear implant adayıdır. Bu çocuklar çeşitli değerlendirmeler sonucunda bir ekip tarafından bu ameliyata karar veriliyor. 4 yaşından küçük olanlarda devlet ödemesi yapılıyor, yaşı 4 den büyük olanlarda ise kronolojik yaşı ile dil yaşı arası 4 yıldan fazla olmaması gerekmektedir. Sonradan kayıplı hastalarda ise konuşma varsa bu ameliyatı olabilirler.

Koklear implantta istenen çift kulakta olmasıdır. İşitme eşiklerinin (duyma) daha iyi olduğu, sesin yönünü bulmada faydaları vardır. Ayrıca bir cihazı arzuladığında ikinci cihazı ile duymaya devam edecektir.

İşitme problemi teşhisi konulan hastalar önce bize geliyor. Ailelere çocuğun problemi ve çözüm yolları üzerine eğitimler veriyoruz. Kaybına en uygun işitme cihazının çocuğa faydalı olup olmadığına bakıyoruz. İşitme cihazından fayda göremezse koklear implantı öneriyoruz. Bu konuda da bilinçlendirme eğitimi veriyoruz. İmplant takıldıktan sonra cihaza alışmaları için adaptasyon eğitimi veriyoruz. Burada önemli olan çocukların birincil bakıcılarının (anne, baba, bakıcı, yakın akraba) bilinçli olması gerekmektedir.

### Eğitimci ve eğitim kurumu

İşitme cihazı takmak veya implant problemi ortadan kaldırmıyor (yok olmuyor). Gözlük gibi takınca problem ortadan kalkmıyor. Asıl iş implant takıldıktan sonra başlıyor. Çocuk dinleme eğitimini ne kadar başarılı yaparsa dil gelişimi de o kadar kaliteli (güzel) olacaktır. Bunun için de doğru bir eğitim kurumunda eğitim almaları gerekiyor. Bu konuda da klinik odyologlardan, eğitimcilerden ve bu alandaki okullardan bilgi alınabilir.

Ailelerin eğitimci seçerken, eğitimcinin mezuniyeti, tecrübesi, bu alandaki uzmanlığını araştırmaları gerekiyor.

Eğitimcilerin de birincil görevi, ailelere örnek olma çalışması olmalıdır. Çünkü çocukların ilk ve en önemli eğitmeni ailedir. Başlangıçta eğitimi ailelere ve aileler üzerinden çocuklara vermemiz gerekiyor.

Biz seminerlerimizde eğitimcilerimize bu konuda önerilerde bulunuyoruz.

### Ailelere öneriler.

Bu süreçte aileler kesinlikle aktif olarak rol almalıdır. Çocuklarda dinleme becerilerinin gelişmesi için, sıra alma davranışı için çeşitli aktiviteler yapılabilir. Sesin varlığı- yokluğu, sesin yüksekliği- alçaklığı, hayvan, nesne, insan seslerinin ayrımı gibi çalışmalar yapılabilir. Örneğin evde bulunan ses çıkaran oyuncaklarla, eşyalarla bu sesin tanınması ve ayır etme çalışmaları yapılabilir. Çocukla keyifli vakit geçirmeleri gerekmektedir. Çocukların uyandıktan sonra bütün zamanlarda cihazları takılı olmalı.

### Cihaz takılan her çocuk normal çocuk gibi konuşabilir mi.

Her çocuk farklıdır ve gelişim aşamalarında farklı olacaktır. Bazı çocuklar hızlı gelişirken bazı çocuklar yavaş gelişebilir. Önemli olan çocuğun cihaz takılmadan öncesi ve takıldıktan sonrasının değerlendirmesidir. Cihaz takıldıktan sonra he alanda bir öncesine göre gelişim göstermesidir. Her çocuğu kendi gelişimi içinde değerlendirmek gereklidir.

## INTERVIEW

Odyometrist Kemal AKGÜN



### **APPLICATION AND FOLLOW-UP OF HEARING AID ON HEARING-IMPAIRED**

Hello! I am Kemal Akgün. I have been dealing with the hearing aid business as an audiometrist since 1996. will give you some information on hearing aids and on their use. People having hearing problems go to the Ear Nose Throat doctor. The ENT doctor examines, and if s/he would be in doubt about hearing impairment, s/he would require an audiometry test. Audiometrists perform hearing test in the quiet rooms. If there is a hearing loss, the patient will be prescribed the instrument required to be used and a report will be given by doctor. With these reports, the patient goes to the hearing centers in order to receive their device. Here the audiometrists examine the reports and determine the most suitable device for the child. They try types of hearing aids suitable for hearing loss on patient. Types of hearing aids; behind-the-ear, eyeglass type, in-canal and bone conduction. The type of hearing aid to be given to the patient is determined by the type of hearing loss, degree, age, social standing and preference of the patient.

After identifying the hearing aid, ear mold is obtained. After the hearing aid is installed in the ear, the hearing aid is adjusted according to the patient's hearing loss by a computer. The device that is made ready for use (adjusted) is attached to the patient.

Batteries are different according to the types of hearing aids. Any battery cannot be used in the hearing aids. They should buy the battery from hearing aid centers.

Patients should carry out daily, weekly, and monthly maintenance on their hearing aids. They have to go to the hearing center every three to four months and have their hearing aids checked. If they cannot get the desired sound from the device, they have to go to the hearing center again and have audiological test made and have their hearing aid adjusted.

They have to protect their hearing aid from moisture, water and falling. They can use moisture tablets or moisture absorber devices. The hearing aid is removed during bathing, sleeping and in rainy weather. Hearing aids must always be attached at other times.

We recommend the person or children having problem in hearing or in understanding their sounds to go to the Ear Nose Throat doctor or audiologists as soon as possible.